PAPER TRADE JOURNAL
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Late Rulings on Paper Announced By OPA

Makers of Industrial Paper and Converted Paper Products May Not Add Increased Freight Costs To Their Maximum Prices, Established In Some Cases By Maximum Price Regulation 129.

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 29, 1942—Manufacturers of industrial paper and converted paper products may not add increased freight costs to their maximum prices which were established in some cases by Maximum Price Regulation No. 129 and in others by the General Maximum Price Regulation, the Office of Price Administration announced today.

Under this interpretation, announced to clarify the problems of freight costs which have arisen since the issuance of the General Maximum Price Regulation, manufacturers who allowed partial freight must absorb the 6% increase in freight rate, effected in March, 1942, and any other increase in freight costs incurred as the result of wartime emergency conditions such as the rerouting of shipments by rail instead of water.

If the manufacturer customarily paid all freight costs he must continue to do so, the Administrator stated.

For example, under this ruling a manufacturer of these paper products who made a specific allowance of 50 cents per hundredweight during the applicable base periods (Oct. 1-15, 1941 and December 1-15, 1941) used in Maximum Price Regulation No. 129 must adjust his allowance to 53 cents per hundredweight.

Certain converted paper and industrial paper products not covered by Maximum Price Regulation No. 129 are under the General Maximum Price Regulation. Manufacturers of these products cannot charge more than the highest March prices, and accordingly the increased freight rates and costs cannot be passed on to the purchasers.

Products covered are: waxed paper; envelopes; paper cups; paper containers and liquid tight containers; sanitary closures and milk bottle caps; drinking straws; certain tissue papers; rope and jute papers; technical papers; gummed papers; tags, pin tickets and marking machine tickets; glazed and fancy papers; standard grocer's and variety bags; resale book matches; unprinted single weight crepe paper in folds; certain bag papers; certain wrapping papers; certain sulphate and certain sulphite papers.

OPA Amends Paper Regulation

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 29, 1942—Certain grades of paper omitted erroneously from the section of Maximum Price Regulation No. 129, which established conditions of sale for these grades, are now included by Amendment No. 4 to the regulation (Paper and paper products) issued today by the Office of Price Administration.

The amendment corrected subparagraph (3) of Section 1347.12 (d) by adding the words "and (d) (2)" so that the conditions of sale affecting maximum prices includes the grades set forth specifically in (d) (2)—"all other grades of Machine Finish Kraft Wrapping Paper, and all grades of Machine Glazed Kraft Wrapping Paper, Machine Finish Variety Bag Paper, Machine Glazed Kraft Bag Paper, including but without limitation Unbleached Kraft Butchers Paper."

The amendment also qualifies Unbleached Kraft Butchers Paper in the same subparagraph by adding to the clause "where the basis weight is 40 pounds and up." No basis weight for this type of paper was originally listed.

Other corrections made by the amendment are:

Variety Bag Papers, glassine, greaseproof, fruit wrapping and manifold are now listed among those excluded from the papers set forth in subparagraph (6) of Section 1347.11 (a), and the word "converting" is inserted to conform with the statement of considerations issued with the regulation.

The additions of the words "Machine Finish and Machine Glazed" to the headnote in paragraph (d) of Section 1347.12 and the addition of the words "Machine Finish to Grades" clarify the types of wrapping and bag paper originally intended to be covered by the regulation.

Subparagraph (2) of Section 1347.12 (d) has been clarified by adding the descriptions of the various grades of kraft paper.

In subparagraph (20) of Section 1347.22 (a) the phrase "90% or more" is now corrected to read "90% to 96%" as was intended.

Merchants Concerned at Declining Demand

Many Midwest Paper Distributors Believe Something Should Be Done To Correct Conservation Program — Paper Men Meet To Discuss Rubber Situation — OCD Has New Slogan — Other News.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., June 29, 1942—With all paper markets definitely presenting an "oversold" condition, local paper trade executives are becoming more and more interested in suggestions that something be done to correct the conservation program which has just about thrown the industry into its position of well over a year ago. Waste papers were described as in the worst shape for some time as local dealers were hard pressed to find storage space for the big accumulations now on hand. Groundwoods and newsprints said mills were reported as well ahead of any present demand while even krafts were reporting that efforts to conserve waste and wrapping paper was finding its effect. Book and cover papers were reported as very slow with the local market destined to get worse before it gets better. Retail volume was drying up as shoppers obviously seemed well stocked up on advance purchases.

Press Home Rubber Shortage Conditions

Members of local associations, and representatives of the trade jobber industry met at the Hotel Sherman on June 25 to hear government agencies explain the necessity of compliance with ODT orders. Present were Frank Purse, district director of the Bureau of Motor Carriers and Harry L. Gormley, field manager for the Chicago area of ODT who made his first appearance before an audience of private carriers since his appointment. One of the chief topics of discussion was the position of private carriers in the operation and control of clearing houses planned to conserve equipment. Fred Faulkner, private carrier member of the Chicago advisory committee, said that private carriers would object to any such clearing house unless it should be under the control and operation of ODT and not the other carrier groups. All speakers indicated that the shortage of rubber was getting much worse and that available trucks were also declining. Members of the paper industry were urged to "conserve every mile" and all those identified with Associations were urged to transmit the seriousness of the situation to non-members before all available equipment had been wasted or "burned up."

Bob Knox Joins Army

The Chicago Paper Association is about to lose a good Secretary and Knox & Schneider a good executive, as R. E. Knox of that firm leaves for the Officers Training School at Fort Benning. Mr. Knox also leaves the presidency of the Printers Supply Salesmen's Guild's western division, an honor which was recently conferred on him by his associates.

Salesmen Announce Golf Winners

Prize winners at the Salesmen's Association golf outing held at the Park Ridge Country Club on June 19, have just been announced by Ray George, Tomahawk Paper Company, chairman of the western division's golf committee. Included among the prize winners were the following: High gross, George Clark, Bradner Smith & Company; blind bogey, Bill Grant, Hobart Paper Company; low net (17 and under), Frank Haggarty, Haggarty Paper Company; low net (18 and over), Irving McHenry, MidStates Gummed Tape Company; second low net, Bill Jones, Riverside Paper Company; third low net, J. Baker, Milprint Company of Milwaukee; low net, first nine, Gene Hammes, Graham Paper Company; low net, second nine, Irving McHenry; low putts, first nine, W. McCarthy, Milprint Company; low putts, second nine, Dan Quirk, Peninsular Paper Company; High gross foursome, Dick Morgan, Phil Howard, Al Harmon and Jim Coy; low net foursome, Frank Haggarty, Gene Jackson, G. Frelinger and Courtney Reeves; low putt foursome, Kenneth Saunders, Ed Rolain, Joe Heyer and Ray George. The prize list is significant because a golf chairman finally won a prize as Ray shared low putt foursome honors and because of the personnel of the quartet which "crashed through" to win high gross foursome honors!

OCD Has New Slogan

"Quit saving paper and burn what you have if it cannot be stored safely for at least four months." This is the advice given by local OCD offices which suggest salvage of rubber and scrap metal instead. Local offices say the paper-recovery machinery of the country has bogged down under the tremendous receipts of the drive to "prevent a paper shortage." It is expected that the accumulated stores will be used up in four months and that another shortage of scrap paper will develop by October. Meanwhile, finding storage for what has been collected is the big problem right now.

To Distribute New Tissue Lines

The A. W. Mendenhall Company of this city has recently acquired additional space at 501 West Huron street to make possible the making and distribution of "Tone" handkerchiefs and cocktail napkins which are made from facial tissue stock. The company bought certain patents a number of months ago and is now having excellent success in making and distributing this product. E. H. Wolfberg is president of the company.

WPB to Call Meeting This Week

The pulp and paper branch of the War Production Board has announced that it will hold a meeting in Chicago on July 2—Thursday—to inform the paper industry of the policies and the work of this branch of the WPB. A New York meeting will be held at the Waldorf-Astoria on Wednesday while the WPB executives who will address the group will convene at the Drake Hotel on Thursday for the local session. Members of the pulp and paper industry as well as executives of the WPB are expected to participate in the program.

Canadian Fear of Paper Shortage Waning

No Dearth of Supply In Essential Grades of Paper Now Expected —Recent Falling Off In Newsprint Shipments Overseas Seems To Assure Ample Supply To Publishers — Other Industrial News.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., June 29, 1942—The most significant development in the paper industry as the month draws to a close is the market subsidence of the fears of a newsprint shortage, or indeed a shortage of any of the essential grades of paper. As far as newsprint is concerned, this is held to be partly accountable for the recent falling off in newsprint shipments from this country, which were down in May by 24,669 tons as compared with a year ago. The largest part of this drop was in shipments overseas, which were down 13,918 tons as compared with a year ago, and by no less than 55,083 tons as compared with May, 1940. A complicating factor is the difficulty of shipping by water to certain points in the United States and to South American countries. In the latter a newsprint shortage has resulted, while in the case of customers in the United States, ordinarily reached by coastwise vessels, transport by rail has had to be undertaken. This makes a big difference in cost, as contract prices are based on delivery to publishers' home centers. The hope is expressed that this will be taken into consideration in connection with the proposed price increase, now under suspension.

The Question of Power

The falling off in production has lessened also the fear of a power shortage later on in the year. At present water is high in the rivers, indeed rainfall has been so heavy in the past week that serious floods have occurred in some of the newsprint producing districts of Quebec. While the power demands of war industries are increasing, and power rationing later on is still held possible, it is considered that in any case it will only be temporary, as new power projects are coming into production at an early date.

The Shawinigan Water and Power Company, the principal power producer in the St. Lawrence Valley, the centre of newsprint manufacture, has announced plans for the immediate installation of a fifth 40,000 hp. unit in its Rapide Blanc plant and also the immediate installation of a fifth 44,500 hp. unit in the recently completed plant at La Tuque. The units will cost about $1,000,000 each.

The Quebec Running Streams Commission, a government organization, has other plans for increasing hydro-electric output, at a cost of some $2,000,000. These include a power development at the Louin reservoir, where the headwaters of the St. Maurice river are impounded, to cost approximately $800,000.

Forestry Information Office Created

The Quebec government has announced the creation of a Forestry Information Office. This office, which will be under the direction of Roch Delisle, forestry engineer in the service of the government since 1929, will distribute among farmers and settlers suggestions for forestry utilization to permit a more profitable exploitation of the woods belonging to them.

By means of conferences and films, the office will show the farmers and settlers how to take care of the forests and will give them other information about the protection and exploitation of Quebec's forestry resources.

Louis E. Leverone Retires

Frank Griswold Hall, president of Stein, Hall & Co., Inc., New York, and Stein, Hall Manufacturing Company, Chicago, manufacturers and distributors of starches, gums and dextrines, has announced the retirement of Louis E. Leverone as general manager of the Chicago company. Mr. Leverone, who has been associated with the company for 30 years, will continue as a vice-president, and at his request retires from the position of general manager in order to devote most of his time to his many civic and other duties. He is president of the Illinois Chamber of Commerce and of the Northwestern University Settlement in Chicago, and is active in the Dartmouth Club and other organizations in that city.

D. M. Hawley, who was appointed production director for all Stein-Hall affiliated companies some time ago, has been elected general manager and vice-president of the Chicago company, with Walter H. Hart as assistant general manager. Mr. Hart is also secretary of the Chicago company.

Edward Butts, Jr., sales manager for the New York company, is now general sales manager for both the Chicago and New York companies.

J. P. Strasser, head of the paper department, has been appointed assistant sales manager at Chicago.

Dr. Alexander Frieden continues as technical director for both companies at the New York office, and Jordan V. Bauer of the Chicago company has been appointed assistant technical director.

Organized in 1866, Stein-Hall celebrated its 75th anniversary last year. The 50th anniversary of Mr. Hall's service was observed two years ago.

De Laval Gets Navy "E"

In a letter announcing the award of the Navy "E" to the De Laval Steam Turbine Company, Trenton, N. J., Secretary of the Navy Knox congratulates the workers and management upon their significant contribution in industrial production toward winning the war. During the first World War and subsequently the De Laval Company took a leading position by reason of both the quantity and the excellence of its output of geared turbine propelling equipment and pumps; and since the beginning of rearmament its activity has been increased to the utmost, the total of orders now running into many millions of horsepower. The plant will be authorized to fly the Navy "E" pennant and employees will be privileged to wear the Navy "E" lapel insignia after the formal presentation ceremonies.

Kimberly-Clark Adopts Protective Program

President Cola G. Parker and All of Approximately 6,000 Employees Are Being Fingerprinted — All Must Wear Identification Buttons — Will Meet To Discuss Timber Cutting — Other News.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., June 29, 1942—Kimberly-Clark Corporation, Neenah, Wis., has its protection program in full swing, and it will be enforced throughout the duration of the war.

One of the major steps is the fingerprinting of every employee from President Cola G. Parker down to all of approximately 6,000 men and women in the organization. This is being accomplished with the assistance of First Lieutenant B. E. Engels of the plant protection division of the War Department, and Irving Stilp, chief of police of Neenah.

The war work protection program was started last January, with James H. Kimberly in charge, and he is being assisted by Gordon Mortensen. Employees have had identification buttons with code numbers printed on them, but will now receive new ones bearing their photographs, the only way they can gain admission to any of the mills.

Protection directors have been appointed at each mill as follows: Badger-Globe mill, Neenah, John Fitzpatrick; Lakeview mill, Neenah, Pierce Manley; Atlas mill, Appleton, Wis., William Hornbeck; Kimberly, Wis., mill, Jack Girard; Niagara, Wis., Joseph Caneverra; Niagara Falls, N. Y., Frank Brooks. Also on the protection committee for each mill are the mill manager, personnel superintendent and the materials department superintendent. Members of each department will be trained to do fingerprinting. Uniformed watchmen have been added to the force, and each has been armed and trained.

Will Meet to Discuss Timber Cutting

Paper mill representatives will be called to a meeting at Wausau, Wis., soon, along with pulpwood jobbers, lumber manufacturers and timber products dealers to hear of the Wisconsin Conservation Commission's plan to pledge them to install voluntary practices in their timber cutting operations. The purpose is to control unrestricted exploitation of Wisconsin forest resources during the war boom. A special committee has been given the plan study, and will make its recommendations. Among those serving are E. B. Hurst, chief forester for Consolidated Water Power and Paper Company, and F. G. Kilp, chief forester of the Nekoosa-Edwards Paper Company. It is believed that those who buy directly from producers are in a position to control timber cutting practices.

The voluntary plan will be attempted as a stop-gap until the Legislature meets next year, when legislation looking towards timber conservation will be introduced by the special committee.

A recent survey indicates that county governments in Wisconsin are the largest owners of timber lands in the state. Twenty northern counties now own about 4,000,000 acres, obtained largely through tax deed sales when the original private owners failed to pay property taxes. The state forest crop law has enabled them to become important instruments in public reforestation. All but about 1,000,000 acres has been planted to forests except where there was natural growth, through the aid of the Wisconsin Conservation Commission.

Valley Iron Works Adds to Plant

Valley Iron Works, Appleton, Wis., is making a small addition to its plant. It will be a building 18 by 25 feet in size to house an annealing oven. The cost will be about $4,000.

Bergstrom Co. Flies "Minute Man" Flag

Bergstrom Paper Company, Neenah, Wis., has joined the list of Wisconsin paper mills entitled to fly the "Minute Man" flag. More than 90 per cent of the workers have joined the payroll deduction plan for the purchase of war bonds.

Nuptials in the Paper Industry

Nyle C. Austin, electrical engineer for Kimberly-Clark Corporation, Neenah, Wis., and Miss Maude R. Harper of Janesville, Wis., were married June 13 at the First Presbyterian church at Janesville. The couple is honeymooning at Chicago and Ludington, Mich., and will reside at 128 Harrison St., Neenah.

Leo Butler, of the Kimberly-Clark Company engineering staff at Kimberly, Wis., and Miss Xenia Lindberg of Maxwell, Nebr., were married June 14 at the First Presbyterian chrch at Kimberly. The couple will reside at Kimberly.

For Fast Stabilizing Control

A new development of unusual importance in the field of control engineering has been announced by The Foxboro Company, under the name of Hyper-Reset. This is not an instrument or a mechanism, but a control function, available in the newly-designed Model 30 Stabilog Controller, for application where process-lag is considerable. Its importance is demonstrated by tests in which Hyper-Reset consistently re-established process stabilization, following an upset, in one-quarter of the time, and with only one-half the upset effect, as compared with a similar controller having only the usual reset.

Hyper-Reset reduces the effects of a process disturbance by making initial temporary additional corrections, which are proportional to the rates of change of the measured value caused by the disturbance. The normal reset follows, establishing stabilization. But the several control functions carried out by Hyper-Reset are simultaneously and automatically adjusted.

No tuning-in is necessary. No more than two process adjustments are required, proportional and Hyper-Reset.

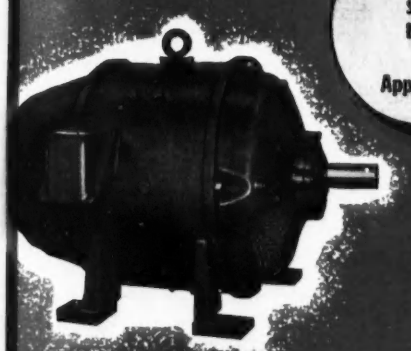
The theory and performance of Hyper-Reset are fully explained in an attractive Bulletin, No. A-330, just issued. Copies will be sent on request to the Foxboro Company, Foxboro, Mass.

These 2 Words MAKE MOTOR-DRIVE More than POWER

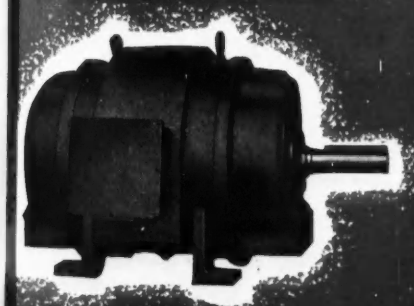
Motor-drive provides within itself a means of:

SPEED CONTROL · TANDEM OPERATION · REVERSING · CONTROLLED ACCELERATION
BRAKING · TENSION CONTROL · REMOTE CONTROL · SAFETY
SLOW SPEEDS FOR INCHING, THREADING, INSPECTION

Applying them to boost production and improve quality is APPLICATION ENGINEERING. That's our business.



Type T Heavy-duty Reliance Motor for direct current with ball bearings.



Splash-proof Type AA Squirrel-cage A-C. Induction Motor with ball bearings.

LIKE MOST RELIANCE MOTORS, this one is more than the name plate says. It was sold *to do a job*—to go beyond providing power. It will take a definite part in a production process by performing functions such as:

Reliance "selling" is "engineering." It is cooperation in answering the question, "What can we get the motor to do besides supply power?" When you have plans afoot requiring new machines or processes, invite a Reliance man to sit in. He can help you get the most from the production aids which are inherent in motor-drive.

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1088 IVANHOE ROAD • • • • CLEVELAND, OHIO

BIRMINGHAM • BOSTON • BUFFALO • CHICAGO • CINCINNATI • DETROIT • GREENVILLE, S.C.
HOUSTON, TEX. • LOS ANGELES • MINNEAPOLIS • NEW YORK • PHILADELPHIA • PITTSBURGH
PORTLAND, ORE. • ST. LOUIS • SAN FRANCISCO • SYRACUSE, N.Y., AND OTHER PRINCIPAL CITIES

RELIANCE A-C D-C MOTORS

Canada Clarifies Position of Advertisers

Latest Advices Indicate That Advertising Expenditures For New Products Will Be Given Consideration—Outlay By War Contract Group To Be Reasonable — Newsprint Consumption Is Affected.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., June 29, 1942—Canadian income tax inspectors have received additional instructions concerning income tax liability of advertisers which clarifies the position of advertisers.

According to the latest instructions income tax inspectors will divide advertisers into two categories. Those whose business does not include war contracts and those which have had large increases in sales as a result of war business.

Those whose business does not include special war contracts will be allowed to charge as a cost of doing business "normal or reasonable" expenditures for advertising. "Normal" advertising expenditures are defined as: Sales made during the 1936-39 period were at the end of the depression period. Normal business showed a definite rising trend with a corresponding normal advertising expense trend, both of which continued through 1940-41. Inspectors may allow normal increased advertising expenditure in whole or in part, according to circumstances. It is not a question of a specific overall amount or a percentage basis on gross sales or units.

Expenditures for New Products Included

Advertising expenditures for new products will be given consideration in accordance with reasonable recognized practice. New companies will be allowed reasonable or normal advertising expense. Advertising expense is intended to include all recognized forms of advertising expense as previously understood.

For the war contract group, a greater amount of advertising expenditure than that made in the excess profits tax base period will not be allowed. An exception is made where either company profits, or turnover, have increased from 30% upward on a sliding scale. In such cases, advertising expenditure may exceed the 1936-39 period by a sliding scale up to 10%. Provision is made for basing this increase on either turnover or profits, but not on both.

Favorable Policy Expected

It is not made clear who determines which yardstick is to be used in choosing the method of applying the tax to the war contract group, but according to the income tax department, the policy followed would likely be to accept the standard which was most favorable to the taxpayer, just as is done in the case of salary increases.

C. R. Vint, chairman of the legislative committee of the Association of Canadian Advertisers, has been working on the matter with C. Fraser Elliott, commissioner of income tax, and it is expected a brief will be presented to Ottawa authorities drawing attention to a number of objectionable features in current policies and suggesting remedies.

Some Past Tax Rulings Deemed Unfair

It is pointed out that certain income tax inspectors have ruled that industrial companies in the first few months of this year have already consumed their advertising allowance for three or four years to come. Such rulings are considered unfair and it is claimed that there is discrimination as between the treatment of new companies and old established concerns. Economies have been made in other directions, particularly in expenses connected with travelling salesmen, and it is felt by some companies that even with a moderate increase in advertising expense, the total expense would be less and therefore there would be no loss to the government in tax revenue.

The effects of the rulings concerning advertising expenses will naturally have some affect on the consumption of newsprint in that it will have a tendency to prevent any increases in advertising volume and therefore keep newspapers from expanding.

Report on Sorg Labor Dispute

The board of conciliation and investigation has recommended in a majority report that the Sorg Pulp Company, Ltd., of Port Mellon, B. C., recognize Local 297 of the International Brotherhood of Pulp, Sulphite and Paper Mill Workers as collective bargaining agent for its employees.

The board further recommended that negotiations should be started with a view to conclusion of a written contract between the company and its employees but "that the initial contract between the union and the Sorg Pulp Company should not include a clause, requested by the union, providing for a closed shop."

Chairman of the board was Judge J. O. Wilson of Ashcroft, appointed on the joint recommendation of the other two members, Percy R. Bengough, of Vancouver, appointed on nomination of the employees, and Brig.-Gen. J. A. Clark, also of Vancouver, appointed on nomination by the employer.

The report of the board is signed by the chairman and Mr. Bengough, and a minority report by Gen. Clark.

The board found that the dispute, affecting about 230 employees directly, relates principally to the question of union recognition. While differences also existed on working conditions at the plant and living conditions in the employees' quarters, the board was of the opinion these differences could be resolved readily once the union recognition issue is settled.

In his minority report Gen. Clark said that in his opinion the management must deal with representatives chosen by its employees whether or not these representatives are union members, but he was opposed to execution of a written agreement on grounds that no person should be obliged to enter into a contract against his will unless the law requires him to do so.

Whether or not employers should be required to enter into written agreements when requested by their employees is, he said, a question of policy to be determined by Parliament.

New Target for Industry:

More Dollars Per Man Per Month in the PAY-ROLL WAR SAVINGS PLAN

TO WIN THIS WAR, more and more billions are needed and needed fast—AT LEAST A BILLION DOLLARS A MONTH IN WAR BOND SALES ALONE!

This means a *minimum* of 10 percent of the gross pay roll invested in War Bonds in every plant, office, firm, and factory in the land.

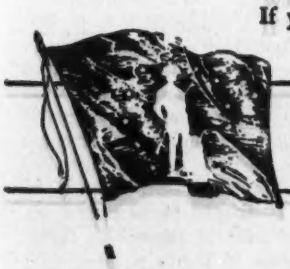
Best and quickest way to raise this money—and at the same time to "brake" inflation—is by stepping up the Pay-Roll War Savings Plan, having every company offer every worker the chance to buy MORE BONDS.

Truly, in this War of Survival, VICTORY BEGINS AT THE PAY WINDOW.

If your firm has already installed the Pay-Roll War Savings Plan, *now is the time*—

1. To secure wider employee participation.
2. *To encourage employees to increase the amount of their allotments for Bonds, to an average of at least 10 percent of earnings—because "token" payments will not win this war any more than "token" resistance will keep the enemy from our shores, our homes.*

If your firm has not already installed the Pay-Roll War Savings Plan, *now is the time to do so.* For full details, plus samples of result-getting literature and promotional helps, write, wire, or phone: War Savings Staff, Section E, Treasury Department, 709 Twelfth Street NW., Washington, D. C.



U. S. War Savings Bonds

This space is a contribution to America's all-out war program by

PAPER TRADE JOURNAL

Bids and Awards for Government Papers

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 1, 1942.—The Government Printing Office has received the following bids for 63,000 sheets of 22 x 34 sulphite writing paper, gummed on one side; Barton, Duer & Koch Paper Company, $19.00 per M sheets; Mudge Paper Company, $17.07; Paper Corp. of U. S., $13.20; Marquette Paper Company, $16.23; Stanford Paper Company, $13.26; Whitaker Paper Company, $15.85; Old Dominion Paper Company, $12.888; Wilcox, Walter Furlong Paper Company, $16.30; Graham Paper Company, $15.70; Central Ohio Paper Company, $17.70; Virginia Paper Company, $13.20; Bradner Smith & Company, $13.39; Coy Hunt & Co., $14.24; and D. L. Ward Company, $17.74.

For 472,600 pounds of 39 x 56½ white offset book paper; D. L. Ward Company, 6.95 cents; Central Ohio Paper Company, 6.12 cents; Perkins-Goodwin Company, 5.5 cents; Paper Corp. of U. S. 6.19 cents; R. P. Andrews Paper Company, 5.07 cents; Marquette Paper Company, 5.08 cents; Aetna Paper Company, 6.52 cents; Stanford Paper Company, 6.35 cents; Barton, Duer & Koch Paper Company, 6.92 cents; Bulkley, Dunton & Co., 4.995 cents; Butler Company, 5.9 cents; Whitaker Paper Company, 5.19 cents; Walker Goulard Plehn Company, 5.53 cents; Tileston & Hollingsworth Company, 5.88 cents; Rex Paper Company, 6.09 cents; Bermingham & Prosser Company, 5.36 cents; and Cauthorne Paper Company, 6.23 cents.

For 470,062 pounds of 39 x 62¾ white offset book paper; D. L. Ward & Co., 6.95 cents; Central Ohio Paper Company, 6.12 cents; Perkins-Goodwin Company, 6.53 cents; Paper Corp. of U. S., 6.25 cents; R. P. Andrews Paper Company, 5.27 cents; Mudge Paper Company, 5.04 cents; Marquette Paper Company, 5.5 cents; Stanford Paper Company, 6.2 cents; Barton, Duer & Koch Paper Company, 6.92 cents; Bulkley, Dunton & Co., 5.65 cents; Butler Company, 5.9 cents; Whitaker Paper Company, 5.19 cents; Graham Paper Company, 6.4 cents; Waller Goulard Plehn Company, Inc., 5.63 cents; Tileston & Hollingsworth Company, 5.88 cents; Rex Paper Company, 6.09 cents; Bermingham & Prosser Company, 5.36 cents; and Cauthorne Paper Company, 6.23 cents.

For 500,000 pounds of 25 x 38 supercalendered book paper; Mudge Paper Company, 5.33 cents; Marquette Paper Company, 5.1 cents; Frank Parsons Paper Company, 4.99 cents; R. P. Andrews Paper Company, 4.74 cents; Mead Sales Paper Company, 5.17 cents; Stanford Paper Company, 5.32 cents; Paper Corp. of U. S., 5.475 cents; Bulkley, Dunton & Co., 6.12 cents; Walker Goulard Plehn Company, 6.12 cents; Central Ohio Paper Company, 5.1 cents; Bradner Smith & Co., 5.49 cents; Perkins-Goodwin Company, 5.39 cents; Whitaker Paper Company, 5.35 cents; and Butler Company, 5.84 cents.

For 8,150 pounds of 25% rag, 28 x 34 pink bond paper; Baxter Paper Company, 12.3 cents; Bradner Smith & Co., 11.75 cents; Whiting Paper Company, 13.75 cents; Barton, Duer & Koch Paper Company, 11.45 cents; Resolute Paper Products Corporation, 11.59 cents; Bulkley Dunton Company, 12.44 cents; Butler Company, 11. 25 cents; Paper Corp. of U. S., 11.45 cents; Collins Manufacturing Company, 11.92 cents; Wilcox Walter Furlong Paper Company, 14.75 cents; Stanford Paper Company, 14.75 cents; Bermingham & Prosser Company, 11.68 cents; Central Ohio Paper Company, 11.45 cents; Aetna Paper Company, 15 cents; and Mudge Paper Company, 12.47 cents.

For 47,322 pounds of 25% rag, 32 x 42 white bond paper; Bradner Smith & Co., 10.75 cents; Butler Company, 9.83 cents; Baxter Paper Company, 10.73 cents; Whiting Paper Company, 13 cents; Stanford Paper Company, 12.75 cents; Paper Corp. of U. S., 10.39 cents; Walker Goulard Plehn Company 10.43 cents; Bermingham & Prosser Company, 9.78 cents; and Aetna Paper Company, 11.58 cents.

Paper Awards

Marquette Paper Company has been awarded the contract for furnishing the Government Printing Office with 31,000 pounds of 24 x 36 tan bristol cover paper at 10.7 cents and the same firm will also furnish 9,000 pounds of the same 28 x 38 at the same price and the R. P. Andrews Paper Company will furnish 1,248 pounds of 28 x 38 tan bristol cover paper at 11.24 cents. Other paper awards just announced by the Printing Office include the following.

R. P. Andrews Paper Company will also furnish 2,400 pounds of 28 x 38 tan bristol cover paper at 12.56 cents and Barton, Duer & Koch Paper Company will furnish 40,970 pounds of 36 x 56 white M. F. book paper at 6.51 cents. The same firm will also furnish 49,656 pounds of 35 x 45 white M. F. book paper at 6.51 cents, and R. P. Andrews Paper Company will furnish 107,123 pounds of 38 x 50 white M. F. hard sized for offset at 5.97 cents. The same firm will also furnish 10,650 pounds of 24 x 36 tan bristol cover paper at 10.9 cents.

Marquette Paper Company will furnish 3,280 pounds of 28 x 39 tan bristol board at 10.7 cents and the same firm will also furnish 74,200 pounds of 45 x 70 white supercalendered book paper at 5.73 cents. Marquette Company will also furnish 44,328 pounds of the same 35 x 45 at 5.73 cents and also 3,605 pounds of 75% rag, 28 x 43 litho-finish map paper at 17.89 cents.

Central Ohio Paper Company will furnish 115,000 pounds of 25% rag, 32 x 42 white bond paper at $1,960.00 and Walker Goulard & Plehn Company will furnish 115,000 pounds of the same at the same price.

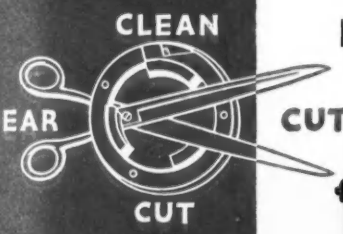
Aetna Paper Company will furnish 57,560 pounds of 25% rag, 38 x 48 white bond paper at 11.94 cents and the Marquette Paper Company will furnish 20,000 pounds of 34 x 36 tan bristol board at 10.7 cents and 20,000 pounds of same 28 x 38 at the same price. Barton, Duer & Koch Paper Company will furnish 38,930 pounds of 32 x 51 white sulphite index paper at 7.6 cents.

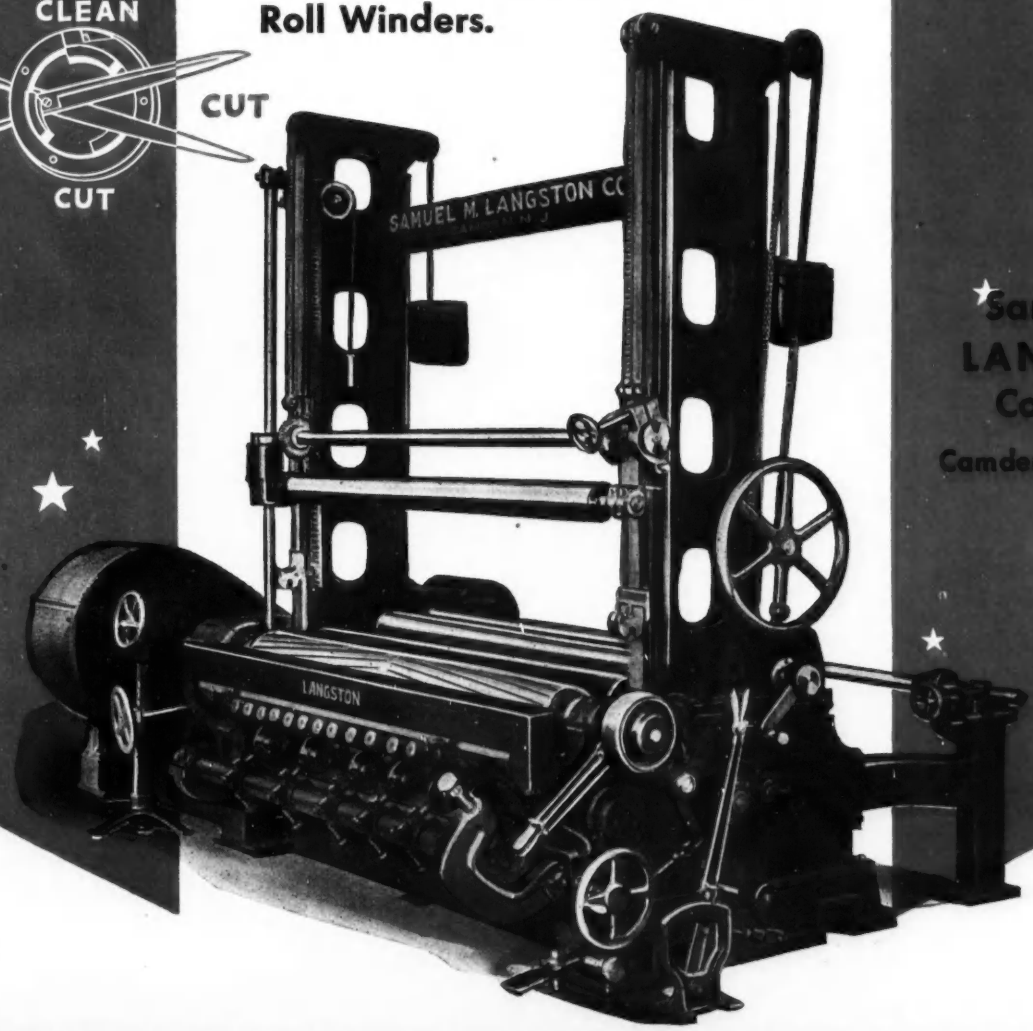
Marquette Paper Company will furnish 19,410 pounds of 25 x 38 tan bristol board at 10.5 cents and Perkins-Goodwin Company will furnish 80,000 pounds of 17 x 22 white sulphite writing paper at $3,983.20. The same firm will also furnish 200,000

Langston

SLITTERS & ROLL WINDERS

are accurately machined and balanced for high speed operation. They make solid, straight-edged, clean cut rolls from any grade of paper or paperboard. For exceptional performance with low maintenance, you can depend on Langston Slitters and Roll Winders.





Samuel M. LANGSTON Company
Camden, New Jersey

pounds of same at $9,558.00. Marquette Paper Company will furnish 20,948 pounds of 35 x 45 white special M. F. book paper at $1,535.49 and Bradner Smith & Company will furnish 8,150 pounds of 25% rag, 28 x 34 green bond paper at $948.66.

Whitaker Paper Company will furnish 700,000 pounds of cream postcard bristol at 6.45 cents and R. P. Andrews Company will furnish 789,129 pounds of same at 6.49 cents. Marquette Paper Company will furnish 34,628 pounds of 36 x 56 white supercalendered book paper at 6.14 cents.

Marquette Paper Company will furnish 107,915 pounds of 36 x 56 white supercalendered book paper at 6.14 cents and the same firm will also furnish 41,825 pounds of 35 x 45 white special M.F. book paper at 7.08 cents. Marquette Company will also furnish 19,884 pounds of 35 x 45 same at 7.33 cents. Cauthorne Paper Company will furnish 42,253 pounds of white M.F. book paper at 7 cents.

Frank Parsons Paper Company will furnish 208,250 pounds of 36 x 56 white M.F. book paper at 7.79 cents and Barton, Duer & Koch Paper Company will furnish 2,000 pounds of 50% rag, 30 x 42 white chart paper at 16 cents. Marquette Paper Company will furnish 21,952 pounds of 35 to 45 white supercalendered book paper at 6.17 cents and the same firm will also furnish 126,885 pounds of 36 x 56 white M.F. book paper at 7.08 cents.

Aetna Paper Company will furnish 5,564 pounds of 25% rag, 38 x 48 white bond paper at 12.06 cents and the Whitaker Paper Company will furnish 20,000 pounds of 24 x 36 No. 2 kraft wrapping paper at 4.75 cents. The same firm will also furnish 48,000 pounds of same 36 x 48 at 4.75 cents. Russell Products Company will furnish 1,000 pounds of 19 x 24 white stereotype molding paper at 13 cents and Barton, Duer & Koch Paper Company will furnish 38,400 pounds of 25% rag, 34 x 44 white bond paper at 10.64 cents. R. P. Andrews Paper Company will furnish 500,000 pounds of supercalendered book paper in 38 inches rolls at 4.75 cents and the same firm will also furnish 79,456 pounds of 36 x 56 white supercalendered book paper at 5.09 cents. R. P. Andrews Paper Company will furnish 7,200 pounds of 50% rag, 22 x 34 blue manifold paper at 18.5 cents; 2,200 pounds of 25% rag, 24 x 34 salmon manifold paper at 18.25 cents; and 8,000 pounds of 50% rag, 22 x 34 white manifold paper at $1,500.00.

Barton, Duer & Koch Paper Company will furnish 31,089 pounds of 32 x 44 white sulphite writing paper at 6.87 cents and the R. P. Andrews Paper Company will furnish 53,025 pounds of 31½ x 48 yellow sulphite writing paper at $7.42 per cwt. Mudge Paper Company will furnish 114,302 pounds of 35½ x 55 jute tag board at 10.75 cents and the Collins Mfg. Company will furnish 28,800 pounds of 24% rag, 22 x 34 buff bond at 11.349 cents and 44,800 pounds of 25% rag, 22 x 34 salmon bondpaper at 11.349 cents.

Barton, Duer & Koch Paper Company will furnish 9,675 pounds of 25% rag, 34 x 44 yellow bond paper at 9.90 cents per cwt. and 3,936 pounds of 34 x 44 white sulphite bond paper at 8.90 cents. Walker Goulard & Plehn Company will furnish 4,340 pounds of 50% rag, 30 x 34 green manifold paper at 19.94 cents.

Stanford Paper Company will furnish 150,000 pounds of H.F. sulphite manila tag board at 6 cents and Fitchburg Paper Company will furnish 256,375 pounds of gasoline rationing paper at 11.25 cents. Collins Mfg. Company will furnish 75,556 pounds of 25% rag, 38 x 48 white bond paper at $8,649.99 and the R. P. Andrews Paper Company will furnish 36,309 pounds of 35 x 45 white M.F. book paper at 7.94 cents and 5,079 pounds of 24 x 36 tan bristol cover paper at 10.9 cents.

Barton, Duer & Koch Paper Company will furnish 16,000 sheets of 22 x 28 buff cardboard at $75.30 per M sheets and R. P. Andrews Paper Company will furnish 7,332 pounds of 28 x 38 tan bristol cover paper at 10.9 cents and 32,381 pounds of 28 x 38 same at 10.9 cents. The same firm will also furnish 123,169 pounds of 24 x 36 same at 10.67 cents and 40,340 pounds of same at 10.67 cents.

Mudge Paper Company will furnish 80,000 pounds of supercalendered book paper at 5.26 cents and R. P. Andrews Paper Company will furnish 53,760 pounds of 38 x 48 supercalendered book paper at 5.47 cents and the Stanford Paper Company will furnish 413,000 pounds of 25 x 38 white supercalendered printing paper at 5.04 cents.

Marquette Paper Company will furnish 187,000 pounds of 32 x 42 white sulphite writing paper at 7 cents and the R. P. Andrews Paper Company will furnish 6,914 pounds of 24 x 36 Twentieth Century tan rope bristol cover paper at 10.9 cents. Mudge Paper Company will furnish 40,000 pounds of yellow sulphite writing paper at 7.17 cents and R. P. Andrews Paper Company will furnish 150,000 pounds of white sulphite writing paper at 5.24 cents.

Frederick H. McEwan Dead

Frederick H. McEwan, president of the Newark Box Board Company, died June 21 at his home in Convent, N. J. He was in his 64th year.

Mr. McEwan was born in Caldwell and came here from Morristown 25 years ago. His father held patents for manufacture of box board from paper and established in Bridgeport, Conn., the forerunner of the McEwan Brothers Paper Company in Whippany.

Mr. McEwan assisted his father and five brothers in operating the Whippany plant a number of years before founding the Newark Box Board Company in partnership with his late brother, Frank McEwan, 30 years ago. He was a member of Morris County Golf Club and a director of the Morristown & Erie Railroad.

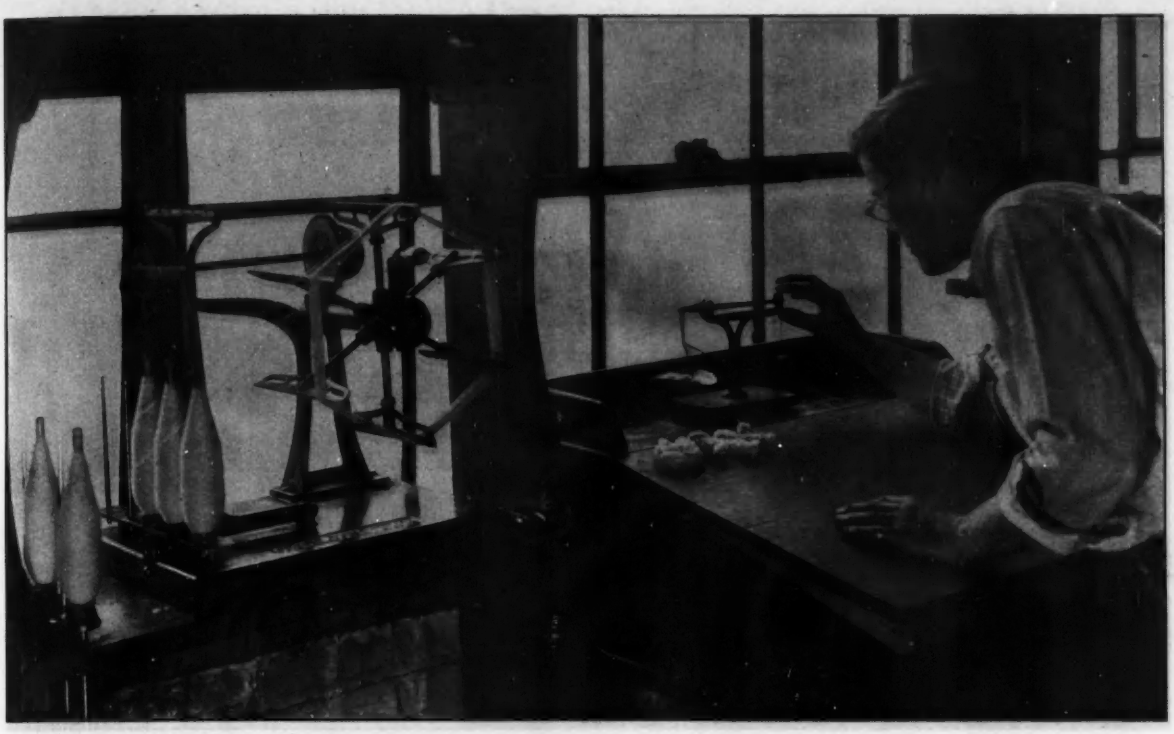
Mr. McEwan leaves his widow, Mrs. Phyllis M. McEwan; three daughters, Miss Dorothy McEwan and Miss Winifred McEwan of Convent and Mrs. Lewin Barringer of Washington; a brother, Arthur McEwan of Whippany, and a sister, Mrs. W. Q. Wilson of Morristown.

Private funeral services were conducted at the home by Mr. McEwan's cousin, Rev. Joseph E. Walsh of Morris Plains.

To Enter Papier Mache Field

[FROM OUR REGULAR CORRESPONDENT]

CANTON, Ohio, June 22, 1942—Mandrels, Inc., has entered the papier mache field as a manufacturer of papier mache specialties, concentrating at the present time on the production of mandrels, a type of industrial form, used in the construction of bullet seal tank liners.



Supplement Government Controls

OPERATING UNDER GOVERNMENT CONTROLS, the paper industry must utilize its available tonnage of wood pulp, its man-power and its equipment at greatest attainable efficiency. Machines must be maintained in first class condition, properly adjusted and clothed. Down time must be minimized; speeds must be consistent; broke must be prevented.

These requirements account, in large measure, for the greatly increased demand for Hamilton Felts. Hamilton Felts supplement governmental controls. Into their manufacture goes more than eighty years experience. This experience controls every operation from the selection, cleaning, weighing, carding and blending the wools to the fulling and finishing of the completed felts. Consequently Hamilton Felts remove more water faster. They reduce the load upon the driers, save steam, prevent broke and permit continuous, high-speed operation of the paper machines.

From the thinnest tissue to the heaviest board there is a Hamilton Felt that will do your work better, faster and at lower cost.

SHULER & BENNINGHOFEN, HAMILTON, OHIO

• Miami Woolen Mills •

Hamilton Felts

• Established 1858 •

Chip Control

By F. M. Williams[1]

The paper industry is becoming chip minded. and well it might when one considers the thousands of dollars which are wasted annually in over-sized, uncookable chips and sawdust which goes to the boiler room.

When you go into a mill as we have done, and find a loss of 18% in over-size chips and sawdust which was easily and practically reduced to 6%, the figures are astounding. A 100 ton sulphite mill will have an annual wood bill of around $600,000. 12% of unnecessary waste is $72,000 a year!

Without attempting to be dramatic or sensational, these facts can easily be proven. You may say this is not happening in your mill, but unless you are practising definite control of your chips, you do not know whether it is happening or not.

We sometimes wish that we had the gift of speech of the Apostle Paul or John the Baptist who could make the world sit up and take notice. But then again, neither Paul nor John the Baptist was able to convert everybody to their way of thinking. So we will probably have to be content in making what noise we can about things which we have found to be really important.

Chips of properly controlled length not only reduce the waste from over-size and sawdust but also save cooking chemicals, increase digest capacity and output as well as the quality of pulp as show both nn pop test and tensile strength.

I have read with interest the able article by C. L. Dickinson and B. E. Lauer.* They stress the importance of screen analysis of pulp wood chips. They do not insist that any one form of device must be used for this purpose but they do point out that you ought to do something about it.

The Williams Apparatus Company has developed a mechanical screening device which is especially well adapted to the classification of wood pulp chips.

Types of Shaking Motion

After testing out all the proposed methods of shaking, up and down or vertical by means of cams, backward and forward reciprocating motion and the oscillating motion as used by the Williams, we believe that the latter has a distinctive advantage over the others.

The up-and-down or vertical movement tends to stand the long chips up on end which assists them in passing the screen. The meanest kind of an oversize chip is the long slim one as the cooking chemicals penetrate from the ends by capillarity and not from the sides. The backward and forward reciprocating motion tends to arrange the long chips with axes perpendicular to the line of thrust of the shaker.

We have found that an oscillating horizontal motion gives the most satisfactory and reproducible results in the screening of wood chips.

Quantity of Chips to be Taken as a Sample

We do not find that one or two pounds of chips is a sufficient quantity to give a representative average of the contents of a large chip bin. We therefore, recommend that at least one cubic foot of chips be taken as a sample.

Time of Shaking

In order that results of the test may be reproducible, the time of shaking should be under definite control, preferably by means of a Mark Time switch.

Practical Application of Chip Analysis

Having in hand the results of a chip analysis, giving percentages of each length, it is easily possible by manipulation of the chipper to improve results. For example, an excessive amount of over-size and long chips and of sawdust usually means dull knives.

The percentage of chips in the bracket of optimum length depends upon angle of grind of knives, bite and setting a bed plate. All of these conditions are subject to close control but you must have a means of knowing what kind of chips you are getting in order to get the best results from your chippers.

Many progressive mills have given this important subject careful thought with most gratifying results.

C. A. Mabey Director of Research

The Bristol Company, Waterbury, Conn., manufacturers of industrial process instruments and automatic control apparatus has announced the appointment of Charles A. Mabey, director of the research activities of the Company. Mr. Mabey, who has served as physicist for several years in this organization, is a Harvard graduate and did advanced work in physics at both Harvard and M.I.T. He also has been associated in research work with International Communications Laboratories of New York, Federal Telegraph Company of Newark, New Jersey, and with Mathieson Alkali Works of New York and is a member of the American Physical Society.

Powell River Uses Covered Barges

Covered barges are being employed by the Powell River Company, of Powell River, B. C., to convey its newsprint from the up-coast pulp and paper town to Vancouver, where connections are made with transcontinental railways.

The Powell River Company has for many years operated its own transportation company and as a subsidiary organization has transported a considerable portion of its newsprint over the 80 mile strip of water between Powell River and Vancouver on their own carriers. A considerable proportion of this delivery on a thrice weekly basis was maintained by the development of covered barges.

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* Paper Trade Journal, April 23, 1942.

[1] President, Williams Apparatus Co., Inc., Watertown, N. Y.

Heads Technical Service

R. W. Miller, who has been connected with the Pittsburgh Plate Glass Company for 12 years, has been appointed manager of the technical service department of the Company's Columbia Chemical Division, it was announced last week.

Mr. Miller has been engaged in technical service activities since 1937, and succeeds Dr. G. L. Cunningham who has resigned. He joined the Company in 1930 after receiving a B.S. degree in chemistry at Pennsylvania State College.

After three years in the Research Department on pilot plant operations and general investigation, Mr.

R. W. Miller

Miller was assigned to study on the uses of Calcium Chloride in soils for engineering purposes. He was active in promoting the principles of soil stabilization, now recognized as an improved method of highway and airport runway construction. Since 1937 he has assisted customers in the application of alkalies and Chlorine.

He is a member of the American Chemical Society; associate member of the Highway Research Board; National Research Council; and a member of three subcommittees in the American Society for Testing Materials. He represents the company in the American Water Works Association; Technical Association of Pulp and Paper Institute; American Pulp and Paper Mill Superintendents Association; and the Calcium Chloride Association, Technical Committee.

Paper Branch of WPB Meets

The Pulp and Paper Branch of the War Production Board, David J. Winton, chief, held a meeting at the Waldorf-Astoria Hotel, New York, on July 1. The purpose of this meeting and a like session held at the Drake Hotel, in Chicago, on July 2, was to present the objectives and policies of the Pulp and Paper Branch to the executives within the industry.

David J. Winton presided and introduced the various speakers. C. W. Boyce, representing the industrial relations department, spoke of the difficulties met and overcome in his review of the progress made to meet the needs of the war effort. He explained the set-up of the Pulp and Paper Branch and the executive heading the various groups covering the major divisions of the industry.

David Luke, of the Classification Section, of the Project and Consulting Units, explaining the overall allocation system through which critical materials may be conserved for urgent war requirements and essential materials supplied to the pulp and paper industry to maintain mills in operation.

Other speakers included William Bailey of the Office of Defense Transportation, who spoke on the difficulties of providing adequate transportation to meet the huge and expanding volume of traffic.

Industrial Rubber Conservation

A 48-page illustrated book on conservation of rubber products in industry has been published by United States Rubber Company. All rubber products now in use by industry are essential to war production and will become increasingly difficult if not impossible to replace.

Complete and explicit suggestions are given for the proper care of these important rubber products from initial design through inventory and storage to use, maintenance, inspection and repair.

The book, First Aid to Industry in Conserving Rubber, is completely indexed and all mechanical rubber goods are included, such as, hose of all types; transmission, conveyor and elevator belts; mechanical packings; electrical tapes, wires and cables; molded and extruded rubber goods; rubber lined equipment; rubber mountings, mats and matting; printing materials; and rubber bonded grinding wheels.

Copies of the book are being mailed immediately to more than 50,000 engineers, plant managers, superintendants and others responsible for production and maintenance in American industries in all parts of the country, and other copies will be available on request.

Egypt Restricts Newsprint

Use of newsprint paper in Egypt is being restricted as a conservation measure, according to a report to the Department of Commerce.

A recent order limits daily newspapers to not more than four pages, with ten supplementary pages allowed monthly. Daily newspapers may appear only six times a week, the choice of days being free. Non daily periodicals may not appear more than once each week. Weekly magazines may not have a larger format than 30 x 44 centimeters, with the number of pages regulated according to the price. In cases where newspapers or magazines are published under two or more different names but constitute in reality one publication, the same restrictions apply. Advertising contracts in newspapers or magazines whose number of pages has been reduced by the order may be cancelled by the advertiser.

War Maps made from Britain's Rags

Maps and charts vital to sea, land and air warfare are now being produced from linens and cottons which form part of the 35,319 tons of rags salvaged in Britain of a value of £249,705. Rags are also helping to make blankets and clothes, and the jute is salvaged for papermaking or for making roofing felt.

FINANCIAL NEWS

New York Stock Exchange

High, Low and Last for Week Ending June 27, 1942

STOCKS

	High	Low	Last
A. P. W.	1⅜	1⅜	1⅜
Armstrong Cork Co.	26¾	26¼	26¾
Celotex Corp.	7⅞	7	7
Celotex Corp., pf.	69⅝	68	68
Certain-Teed Products Corp.	2	1⅞	2
Certain-Teed Products Corp., pf.	24¼	23¾	23¾
Champion Paper & Fibre Co.	14⅜	14⅜	14⅜
Champion Paper & Fibre Co., pf.	96	96	96
Congoleum Nairn Co.	15	14⅛	14⅛
Container Corp. of America	12¼	12	12
Continental-Diamond Fibre Co.	6⅞	6⅜	6⅜
Crown-Zellerbach Co.	10½	10⅛	10¼
Crown-Zellerbach Co., pf.	78	78	78
Dixie-Vortex Co.	8½	8½	8½
Dixie-Vortex Co.-A.	34½	33½	33½
Flintkote Co.	11	10½	10¾
Robert Gair	1⅝	1½	1½
Robert Gair, pf.	....	....	....
International Paper Co.	9½	8⅜	8⅞
International Paper Co., pf.	48½	46½	46⅝
Johns-Manville Corp.	54¾	53⅜	54⅝
Johns-Manville Corp., pf.	125⅛	125⅛	125⅛
Kimberly Clark Corp.	24½	24½	24½
MacAndrews & Forbes	17½	17½	17½
MacAndrews & Forbes, pf.	....	....	....
Masonite Corp.	25¾	25	25¼
Mead Corp.	6½	6⅜	6⅜
Mead Corp., pf.	....	....	....
Paraffine Companies, Inc.	27	27	27
Paraffine Companies, Inc., pf.	92	92	92
Rayonier, Inc.	8¼	8⅛	8⅛
Rayonier, Inc., pf.	24	23¾	23¾
Ruberoid Co.	18	17½	17½
Scott Paper Co.	31	30⅜	31
Scott Paper Co., pf.	114	112⅞	112⅞
Sutherland Paper Co.	....	....	....
Union Bag & Paper Corp.	8⅛	8	8⅛
United Paperboard Co.	3	3	3
U. S. Gypsum Co.	47¾	46⅛	46⅞
U. S. Gypsum Co., pf.	....	....	....
West Virginia Pulp & Paper Co.	13	12¾	12¾

BONDS

Abitibi Pulp & Paper Co. 5s '53	48¼	48¼	48¼
Celotex Corp. 4½s '47	98	97⅜	97⅜
Certain-Teed Products Corp. 5½s '48	87⅜	86½	86½
Champion Paper & Fibre Co. 4¾s '50	104⅞	104⅞	104⅞
Champion Paper & Fibre Co. 4¾s '50	....	....	....
International Paper Co. 6s '55	104¾	104¾	104¾
International Paper Co. 5s '47	104½	104⅛	104⅛
Mead Corp. 4½s '55	....	....	....
West Virginia Pulp & Paper Co. 3s '54	104	104	104

New York Curb Exchange

High, Low and Last for Week Ending June 27, 1942

STOCKS

	High	Low	Last
American Box Board Co.	....	....	....
Brown Co., pf.	....	....	....
Great Northern Paper Co.	....	....	....
Hummel-Ross Fibre Corp.	3⅛	3	3⅛
National Container Corp.	....	....	....
St. Regis Paper Co.	1⅛	1⅛	1⅛
St. Regis Paper Co., pf.	....	....	....
Taggart Corp.	2½	2½	2½

BONDS

American Writing Paper Co. 6s '61	82½	82	82

Mead Files with SEC

A registration statement covering the proposed issuance of 8,000 shares of $5.50 cumulative preferred stock, Series B, with warrants attached for the purchase of common stock, series of 1937, and, of 97,200 shares of no-par common stock was filed June 27 with the Securities and Exchange Commission by the Mead Corporation.

The common stock will be issued in two groups, one of 73,200 shares and one of 24,000, the latter reserved against the exercise of the 8,000 warrants which are also a part of the proposed issue.

The company through the statement offers to all holders of its first preferred stock and all holders of common stock of the Escanaba Paper Company one-half share of the new $5.50 cumulative preferred stock and four and one-half shares of the no-par common stock for each share of Escanaba preferred and one-tenth share of Mead no-par common stock for each share of Escanaba common.

The offering is not being underwritten. Although there is no firm commitment on the part of any persons to take the entire issue, the Mead Corporation stated that thirteen persons and corporations holding 35.01% of the first preferred stock, Series A; 46.63% of the first preferred stock, Series B, and 38.275% of the common stock of Escanaba have indicated their intention of accepting the exchange offer when and if made.

Abitibi Earnings Decline

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., June 22, 1942—A report just issued by G. T. Clarkson, receiver and manager of Abitibi Power and Paper Company, Ltd., shows that earnings for May, 1942, prior to audit, charges for depreciation, bond interest of $255,249 (includes interest on overdue and unpaid interest) and income and excess profits taxes, amounted to $569,749, as compared with $752,858 in May, 1941, and $649,565 in April, 1942.

Included in the earnings for May, 1942, was $152,145 received as premium on U. S. exchange. Bond interest of $255,249 is exclusive of the premium which would require to have been provided to permit payment of such interest to be made in U. S. funds, as may be required.

Shipments of newsprint in May, 1942, amounted to 27,950 tons, as compared with shipments of 35,494 tons of newsprint in May, 1941, and 28,146 tons of newsprint in April, 1942. Present indications are that shipments of newsprint in June, 1942, will be about 26,000 tons, as compared with 35,384 tons in June, 1941.

Shipments of sulphite and groundwood pulps amounted to 10,289 tons, in May, 1942, as compared with 7,359 tons of sulphite pulp in May, 1941, and 11,574 tons of sulphite and groundwood pulps in April, 1942. Present indications are that shipments of sulphite pulps will amount to about 9,000 tons in June, 1942, as compared with 7,220 tons of sulphite pulp in June, 1941.

Westminster Nets $1.09 Share

Sales of the Westminster Paper Company, New Westminster, B. C., last year exceeded those of 1940 by more than $100,000 but profits were less owing to increased costs, according to President J. J. Herb's statement to the company's annual meeting.

Net profit after all deductions including writeoff of $70,071 for depreciation was $52,166 or $1.09 per share, compared with $70,395 or $1.47 per share the previous year. As in the preceding year the 50-cent dividend was paid.

During the past year additions to plant and equipment were carried out at a cost of close to $250,000, according to Mr. Herb, who states that in view of interruptions in operating schedule the economy ex-

pected as a result of the building program was not reflected in the year's earnings as much as would have been the case under normal conditions.

"We operated under very trying conditions," points out Mr. Herb. "Lost productive time, labor problems, priorities, etc., applicable to the installation of new equipment caused us no end of concern and we frankly feel fortunate in having maintained our position as well as reflected in the statement."

Mersey's Earnings Off Slightly

MONTREAL, Que., June 22, 1942—The financial statement of the Mersey Paper Company, of Liverpool, N. S., for 1941, shows a slight reduction in gross profits after provision for depletion and a moderate reduction in net after heavier provision for taxes, including provision for provincial taxes on 1940 profits. Consolidated balance shows working capital at $1,570,820, as compared with $1,395,547 a year ago, $1,852,623 two years ago.

Gross profit at $1,407,897 compared with $1,442,412 a year ago. This profit covered all interest charges 6.1 times before depreciation, against 4.8 times a year ago, and after depreciation, at $659,884 vs. $642,811, coverage was 3.3 times against 2.67 times a year ago. After all charges, including taxes etc., net profit at $286,031 was equal to 5.72% on the 5½% preferred, against $332,965, equal to 6.16% a year ago.

The company's mill, which is situated at Tidewater on the Nova Scotia coast, has a capacity of 650,000 lbs. of newsprint per 24 hours.

W. J. Dixon Heads Kraft Association

At an executive meeting of the Kraft Paper Association, 122 East 42nd street, New York, on June 26, Willard J. Nixon, vice-president of the St. Regis Paper Company, was elected president of the Kraft Paper Association to fill the unexpired term of E. R. Gay, who resigned as president of the association to become Special Adviser to the Office of Civilian Supply, War Production Board, Washington, D. C.

G. B. Gibson, vice-president of the Union Bag and Paper Corporation will continue as vice-president of the Kraft Paper Association as elected on February 17, 1942.

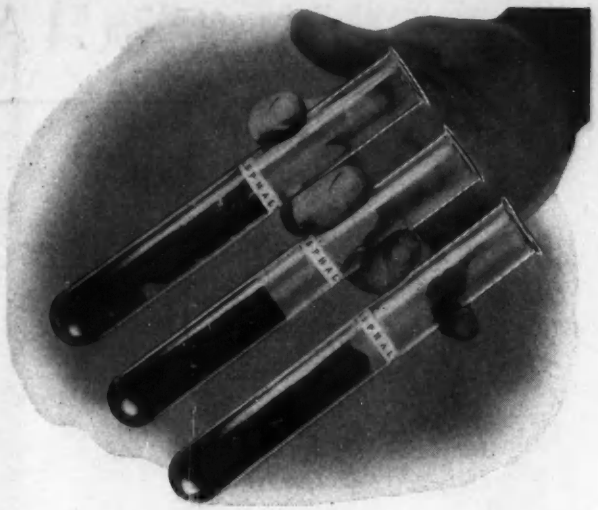
To Be Assistant General Manager

The appointment of R. B. McKinney as assistant general manager, Paper Makers Chemical Department, was announced today by Hercules Powder Company.

Mr. McKinney, a native of Wilmington, Del., has been associated with the Paper Makers Chemical Department for the past four and a half years. Prior to that time, he was Director of Purchases for Hercules. He joined the Hercules organization on January 1, 1913, in charge of a branch in the Accounting Department, and rose to be purchasing agent of the company upon establishment of its Purchasing Department in 1918.

St. Regis Votes Dividend

The St. Regis Paper Company has declared a dividend of $1.75 a share on the preferred stock, payable July 1 to stockholders of record June 22. This is the first payment since April 1, 1932.



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CONSTRUCTION NEWS

Under limitations order L-41 all projects involving expenditures of more than $5,000 must be specifically approved by the War Production Board. The status of projects reported herewith under the provisions of this order is not known.—EDITOR.

Green Bay, Wis.—Fort Howard Paper Company, manufacturer of tissue paper stocks, crepe paper, etc., has completed plans for new addition to mill, to be used for storage and distribution. Erection is scheduled to begin at early date. Harry W. Williams, Northern Building, Green Bay, is architect.

Laurel, Miss.—Masonite Corporation, manufacturer of wood fiber insulating board, wall board specialties, etc., has plans under way for the installation of equipment and facilities for elimination of stream pollution, brought about by wastes from pulp mill. Project is being designed as an effective solution of this difficulty. Work will be placed under way soon.

Bridgeport, Conn.—Eastern Bag and Paper Company, 647 Water street, manufacturer of paper bags, containers, etc., has taken out a permit for alterations and improvements in mill. Work will be placed under way at once. General contract has been awarded to S. Fine Company, 36 Drouve street, Bridgeport. Harry Koerner, 83 Fairfield avenue, Bridgeport, is architect.

East Hartford, Conn.—The Sanitary Paper Mills, Inc., Burnside, East Hartford, manufacturer of tissue paper stocks, has completed plans for new one-story addition to mill at 2 Forbes street, to be used for storage and distribution. It will replace a former frame structure destroyed by fire. No estimate of cost announced. General contract for erection has been awarded to the Bartlett & Brainerd Company, 103 Woodbine street, Hartford, and work will be placed under way at once.

Cincinnati, Ohio — The Clopay Corporation, Clopay Square, Cincinnati, manufacturer of paper products, has begun erection of building at York and McLean streets, for storage and distributing service, recently referred to in these columns, and will push work to early completion. Beck-Wolf, Inc., 809 Walnut street, Cincinnati, has the general construction contract.

Cass, W. Va. — F. Edwin Mower, Masonic Temple Building, Charleston, W. Va., and associates are said to have concluded negotiations with the West Virginia Pulp and Paper Company, 230 Park avenue, New York, N. Y., for the purchase of certain properties in vicinity of Cass, Pocahontas County, including about 71,000 acres of timberlands, with mineral rights on about 70,000 acres of additional lands; also several kiln units heretofore used by the company, as well as other facilities. The new owners are reported planning further development of the properties.

Philadelphia, Pa.—Cleveland Container Company, 10630 Berea road, Cleveland, Ohio, manufacturer of paper cans, tubing, fiber containers, etc., has arranged for purchase of building at Oregon avenue and Swanson street, Philadelphia, occupied by its factory branch in that city under lease, and will develop property for permanent occupancy.

Chicago, Ill.—The South Side Waste Material Company, 5833 South Thropp street, waste paper products, has awarded general contract to Zisken Construction Company, 4424 Roosevelt road, for alterations and improvements in storage and distributing building. No estimate of cost announced. Work will be placed under way at once.

Chicago, Ill.—The Sherwin-Williams Company, 101 Prospect avenue, N.W., Cleveland, Ohio, manufacturer of paints, varnishes, oils, etc., has converted its can-manufacturing division at plant at 635 East 115th street, Chicago, for the production of paper containers of special type, replacing metal cans heretofore used for company products. New can is formed of a wall of specially impregnated paper, using asphalt on one of the three layers of paper used for this treatment. The container is air-tight, will not leak and the paper used is not soluble in ordinary paint. Terne plate, a lead-coated steel, is used for bottom and top of the can. New can, now being made in quart size, will be developed in gallon-sized containers at early date. It is said that about 80 per cent of company products can use the new paper can effectively, while only slight modifications in company machinery have been necessary for the manufacture of the new can units, which weigh less than all-metal containers previously used.

Montreal, Que.—Shawinigan Water and Power Company, Ltd., 107 Craig street, West, Montreal, Que., has authorized expansion in Rapide Blanc hydroelectric generating station, for increased power supply for paper and pulp mills, as well as other industrial plants served by the station. A new 40,000-hp. hydraulic turbine and generating unit will be installed, making the fifth such machine at the plant. The St. Maurice Power Corporation, an associated interest, also will carry out expansion in its recently completed hydroelectric generating station at La Tuque, for increased power supply for similar industrial service. Installation will include a hydraulic turbine-generator and auxiliary equipment. This will be the fifth such generating unit at that plant. Work is scheduled to begin at early date and will be carried out in both cases under direction of Shawinigan Engineering Company, Ltd., Montreal, in charge of design and installation.

H. M. Ellsworth Gets Offices

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., June 29, 1942—Harry M. Ellsworth, advertising manager of Pennsylvania Salt Manufacturing Company, chemicals, has been elected vice-president of the Eastern Industrial Advertisers Association for the 1942-43 term. The association membership is in the Philadelphia, Chester, Wilmington and Trenton areas. Mr. Ellsworth also serves as chairman of the employment section for the Eastern district of the National Industrial Advertisers Association.

May Statistics

Production of newsprint in Canada during May, 1942, amounted to 251,831 tons and shipments to 266,443 tons according to the News Print Service Bureau. Production in the United States was 80,040 tons and shipments 76,612 tons, making a total United States and Canadian news print production of 331,871 tons and shipments of 343,055 tons. During May, 24,995 tons of news print were made in Newfoundland, so that the North American production for the month amounted to 356,866 tons. Total production in May, 1941, was 404,204 tons. There was one more working day in May, 1941, than in May, 1942.

The Canadian mills produced 67,975 tons more in the first five months of 1942 than in the first five months of 1941, which was an increase of five percent. The output in the United States was 29,639 tons or six and eight tenths percent less than in the first five months of 1941, in Newfoundland production was 11,826 tons or eight and one tenth percent less, making a net increase of 26,510 tons, or one and four tenths percent more than in the first five months of 1941.

Stocks of news print paper at the end of May were 169,409 tons at Canadian mills and 16,076 tons at United States mills, making a combined total of 185,485 tons compared with 196,669 tons on April 30, 1942, and 187,571 tons at the end of May, 1941.

To Build Wallboard Mill

A Swedish factory will be erected in the near future to manufacture an entirely new type of insulating wallboard, according to a report to the Department of Commerce. One of the leading sawmills in Sweden will build the factory near its sulphite mill in Kramfors, and expects to begin operation toward the end of this year.

This new type of insulating board, the report states, is made of cellulose fibers and is particularly light. Its insulating capacity is said to be three and a half times greater than solid wood and fully comparable with ordinary cork boards previously used but now not obtainable. By special treatment it can be made completely resistant to moisture and mold. It is particularly recommended as filling material in walls and floors of buildings where hearing must be considerably economized, and can also be applied to exterior walls. Its use is also suggested for insulating railway cars and perhaps airplanes, as it is not only light but can stand shaking and rough handling.

Maintenance Suggestions for Super-Calender Rolls

For longer and better service—1. Condition in the stack for 16 to 24 hours, 48 if possible. 2. Use wetting agents frequently but sparingly. 3. Maintain uniform diameter. 4. Avoid sanding if possible. Use wetting and sponging method to retain surface polish. 5. Take temperatures along roll frequently to determine high spots or uneven caliper papers. 6. Check alignment on check plate bearing stacks. 7. Paper and coating machine operators should cooperate to maintain even surface papers.

Johns-Manville Guide

Designed to help get maximum production from equipment and eliminate unnecessary shut-downs, a new operating practice manual, just published by Johns-Manville, gives many practical suggestions on getting better service from maintenance materials. Called "101 Suggestions for Good Operating Practice," the guide outlines in tabular form many hints on lengthening the life of packings, insulations, roofings, friction materials, and refractory products. Conveniently set up for quick reference, the manual contains a summary of good installation and maintenance practices, providing a handy guide for maintenance engineers.

Copies of the book, Form PP-9A, will be furnished upon request to Johns-Manville, 22 East 40th street, New York.

PAPER TRADE JOURNAL

Title Reg. U. S. Pat. Off.

Henry J. Berger
EDITOR

Vol. 115 July 2, 1942 No. 1

COMING EVENTS IN PAPER INDUSTRY

NEW ENGLAND SECTION. Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Roger Smith Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION. Technical Association of the Pulp and Paper Industry—First Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION. Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

KALAMAZOO VALLEY SECTION. Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park, American Hotel, Kalamazoo, Mich.

TECHNICAL ASSOCIATION OF THE PULP AND PAPER INDUSTRY, Fall Meeting, Statler Hotel, Boston, Mass., September 30-October 1.

COMBATING INFLATION

With total war expenditures above 3 billion dollars in May and soon expected to reach approximately 2 hundred million dollars daily, the need for effective means to combat inflation becomes more urgent. Of the 3 billion dollars expenditures, more than three-fourths represents payments for munitions, military supplies, and new construction. The remainder was for pay and subsistence of the military forces.

These figures are impressively large and the current *Business Bulletin*, published by La Salle Extension University, states: "Expenditures are approaching the rate of $50,000,000,000 annually. That rate represents approximately one-half the national income, and also about one-half the production capacity of the country. The physical volume of output for war purposes is estimated to exceed the total output of the country a few years ago. The war industries are consuming material so rapidly that further shortages of basic supplies are expected. These shortages may somewhat curb further expansion in total output, but the shifting away from civilian production to military production will be intensified. More emphasis is likely to be placed upon utilizing present facilities to produce more of the ships, planes, tanks, and other equipment that are needed rather than upon building new plants . . . According to current estimates, the principal war industries are increasing their output beyond schedule rates. Tank production is said to be considerably ahead of schedule. Aircraft production has equalled or exceeded schedule during each month of this year. Shipbuilding is increasing rapidly, and, if conditions remain favorable, is expected to reach the year's objective of at least 8,000,000 tons. During the first four months, 106 merchant ships were completed and 200 ships started. The production of anti-aircraft and anti-tank guns is also being maintained close to the scheduled rate, according to current reports."

In commenting on diverging trends among industries the *Bulletin* points out that, "The striking differences between the war industries and other lines of manufacturing have become even more significant each month. The index of production of producers' durable goods has expanded sharply, and is now more than twice as high as it was when the war program started in June, 1940. Included in this index are the important war industries, such as steel, aircraft, shipbuilding, machinery, and transportation equipment. In many of these individual lines, production has increased many times more rapidly than the general average. During the same period, the production of consumers' durable goods, which includes such items as passenger automobiles, refrigerators, and household appliances, has declined and is now less than half the rate of two years ago. This kind of consumption will decline even further because of the curtailment orders which have practically stopped production in many of these lines since last month. Further curtailment is sure to result from the conservation order by the War Production Board prohibiting the use of iron and steel in the manufacture of over 400 civilian products and probably more products will be added to this list." Continuing the *Bulletin* comments on consumer incomes now rapidly rising as follows: "Not all consumer goods are being reduced as drastically as is the production of durable goods. This type of goods, however, in normal times uses up a considerable portion of consumer income. In other lines of civilian production, the output of factories continues at about the same rate as before or is declining somewhat. Even in these, however, a portion of the output is being used by the military forces. The result is that a much smaller quantity of consumer goods is available. At the same time, the incomes of consumers continue to expand. Payrolls in manufacturing industries have risen 38% in the last year. Expansion has been greatest among employees in the durable goods lines, but income has also increased among employees manufacturing non-durable goods. The average weekly earnings of workers in manufacturing industries is estimated by the National Industrial Conference Board at $37.49 a week. This figure represents a gain of $6.08 over the weekly rate a year ago. Farm income is up 40%."

It is this expansion of war production goods and higher payrolls while the amount of civilian goods is declining, that creates large surplus funds or buying power. This excess of buying power competing for a declining supply of goods, creates competition among buyers and exerts a strong influence for higher

and higher prices. To meet this ascending spiral of prices, the President in his recent message to Congress advocated a seven-point program to combat inflation as follows: (1) Keep personal and business profits at a low, reasonable rate through heavier taxation. (2) Establish ceilings or maximum prices for commodities and rents. (3) Stabilize wages and salaries to keep costs and prices down. (4) Stabilize farm prices and keep them from going much above parity. (5) Encourage everyone to buy more Government war bonds to finance the war and to absorb more of the larger consumer purchasing power. (6) Ration all essential commodities that are scarce, in order to provide for a fair distribution of available goods. (7) Discourage buying on credit and encourage paying off debts and mortgages.

It is important for every individual to remember that, while the Government can and has adopted measures to control inflation, no efforts of the Government can effectively combat rising prices without the fullest cooperation of every citizen.

Fined for Increasing Wages

British Columbia Box Ltd., Heather street, Vancouver, B. C., was sentenced to the minimum fine of $100 recently for increasing wages without permission of the National War Labour Board. Andrew P. Harvey, managing director of the company, told the court he had authorized increases after a group of 40 to 50 employees had made representation to him. He had applied to the Labour Board and receiving no reply assumed permission had been granted.

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1942		Corresponding Weeks—1941	
May 16	97.9	May 17	98.6
May 23	93.8	May 24	100.2
May 30	92.3	May 31	96.8
June 6	89.7	June 7	96.8
June 13	88.2	June 14	99.0
June 20 (Prelim.)	86.9	June 21	99.9

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July
1941	85.6	89.7	92.2	96.0	98.7	99.3	94.2
1942	104.0	103.4	102.7	100.3	95.5	...	...

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1941	101.0	99.7	105.2	106.2	100.4	97.4
1942	...	...	...	...	...	...

COMPARATIVE YEARLY SUMMARIES

	1935	1936	1937	1938	1939	1940	1941	1942
Year to Date	68.5	78.2	89.1	67.4	79.6	86.8	93.1	99.6
Year Average	69.9	80.4	79.8	71.5	83.4	85.6	97.8	...

* Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

PAPERBOARD OPERATING RATIOS †

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1937	83	89	89	91	88	80	69	77	72	70	57	47	75
1938	56	63	63	60	60	59	59	69	70	73	67	61	64
1939	65	73	76	74	69	73	68	77	82	91	88	77	77
1940	78	75	74	76	82	85	77	79	78	85	82	77	78
1941	81	88	89	89	91	94	92	98	95	99	98	90	92
1942	102	101	101	93	82	..	..	..	..	..	..	..	..

Week ending May 16, 1942—82 Week ending June 6, 1942—69
Week ending May 23, 1942—81 Week ending June 13, 1942—72
Week ending May 30, 1942—77 Week ending June 20, 1942—69

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Assn.

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PRIORITIES, allocations of raw materials and all the other restrictions on war-time production have reduced our ability to serve some of our oldest and best customers. Perhaps, you are one of them.

"First things first" has necessarily characterized our war work —has favored the equipment needs of those companies which could harness this equipment to the production of the strategic essentials of modern warfare.

But we haven't forgotten our "non-war work" customers, whose patronage we received during the quarter century of peace between wars. Today they are striving manfully to get by as best they can with what little equipment they have.

Their lack of priorities prevents our building new equipment for them. But their lack of priorities does not prevent our sharing with them our "know how" and processing ideas. On this simple fact rests the Dorr Processing Assistance Plan, outlined at the right.

The Dorr Processing Assistance Plan is based on a sincere desire to help users of Dorr equipment whose equipment inventories seem to be frozen for the duration. We aim to serve them, if not with machines, then with ideas.

THE DORR PROCESSING ASSISTANCE PLAN

You—write us a complete statement of your processing problem—more capacity, higher quality, change of product, or whatever you desire.

We—check your problem from four angles—engineering, design, operation, and development—and recommend a solution, if it is possible to do so.

We will send an engineer to review your problem with you when such a trip is warranted.

You—obtain the best suggestions we can make from the vantage points of broad processing experience and familiarity with the scope and limitations of our own equipment.

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Section of the
Technical Association of the Pulp and Paper Industry

Edited by Ronald G. Macdonald, Secretary

Care, Study and Ingenuity Applied To Flat Screens*

By Allen A. Lowe[1]

Inspection

The purpose of this talk is to make suggestions as to how to get the most from flat screens, and maintain them in the best condition during the war emergency. Such an article properly includes maintenance, operation and replacement of critical materials.

The attitude of the mill man toward his screens should be: care, study and ingenuity. Flat screens have been paper mill equipment since the development of papermaking as a continuous process, and they have been part of pulp mill equipment since the invention of wood pulp.

But since a flat screen will go on passing stock when it is in terrible shape, this piece of equipment has often been honored by neglect. This condition is no longer as prevalent as it was, but still the flat screen does not get as much care and thought as does the rest of the pulp and paper mill equipment. In addition to the specific suggestions contained here, I want to make this general one: try studying the screening operation as you do the formation on the wire, or the cooking in the digester. Such study will reward you with increased capacity, better dirt removal or both. It will lead to anticipation of replacement needs which will help solve the critical material problem.

Improved maintenance will give more satisfactory operation and longer life from the expendable parts of the screens, and also serve to conserve critical materials. Maintenance includes inspection, painting, lubrication, cleaning and repair.

To start with inspection, make it routine for both the oiler and the millwright. If, as superintendent, you look your flat screens over once a week, checking the work of the regular workmen, and anticipating complete failure of some wearing part, it will be worth while. If it is a critical material which cannot be replaced by a substitute, the effort to get it will be made in time. Or ingenuity may suggest satisfactory substitutes, and you will arrange to secure them in time.

I ask you to think back to the last time you looked at the underbody of the screen, and gave any thought to how it was being cared for, and to whether the care or lack of it was economical. While you are remembering when you last saw the screen mechanism, think how accessible it is, and whether the workmen, who have a smaller stake in continuous and efficient operation, find it a difficult place to go. Maybe they do not go there as often as they should. Perhaps a little thought would make the underbody more accessible.

On toe block screens inspection of the drive and vibrating mechanism should cover broken springs, both flat and spiral. Even the slightest misalignment coming from these causes reduces the capacity by a large percentage. Look for worn toe blocks and see that they are replaced before the clamps ride the cams. Frequent replacement of toe blocks is sound economy where capacity must be maintained. When a toe block starts to wear, capacity is reduced. Underbody inspection shows failed diaphragms, permitting loss of stock from leakage through cracks.

Maintenance

On screens with a modern drive inspection of the underbody is also essential. While the modern drive, either eccentric or roller shoe, is less likely to need replacement parts, the expendable parts are more likely to be of critical materials, and replacement should be anticipated as far ahead as possible. Diaphragms fail on modern drive screens as well as on toe block types.

While any kind of paint is available keep the screens painted. Even screens which seem to be decrepit as to the wooden vat, frame and flow box, can be nursed along by protecting what is left of the surface. If chemical and heat resisting paint is procurable, improved cleanliness may be secured by coating the parts exposed to the stock.

Going on to lubrication, the flat screen responds to a study of the oil and grease problem just as does the fourdrinier.

On toe block screens grease or heavy oil is a mistake. Replace it with an emulsion of good body. This could be made from reclaimed oil from other parts of the mill. It will lubricate adequately, and it won't throw or spread all over the girt and floor. Grease on the girt and floor is simply a form of waste. Frequent inspection and replacement of bearing lubricants is an economy.

On drives such as the roller shoe or eccentric, the manufacturer or his bulletins recommend correct

* Presented at the Annual Meeting of the American Pulp and Paper Mill Superintendents Association, Grand Rapids, Mich., June 16-18, 1942.

[1] Field Engineer, The Sandy Hill Iron & Brass Works, Hudson Falls, N. Y.

lubricants. On the roller shoe drive, for instance, a medium weight engine oil is all that is necessary. A heavy oil will throw.

This matter of using lubricants which will not spread oil over the underbody is emphasized because a clean mechanism lets you see what it is doing. If you can see what you are doing you'll do it better.

Neatly made drier felt curtains around the underbody will keep out water from the hose on a wash up. Small precautions like this will prevent dilution of lubrication and failure of bearings.

Cleaning the screen is the next item under maintenance. Screen cleaning should be periodical and not left to chance shutdowns. A standard flat screen of any make is hinged to permit tilting the vat up to get at all parts of the diaphragm chamber. If there is no room for such a tip-up the vat should be raised straight up in the air with the plates horizontal. A chain hoist attached to a sky-hook over the screen will raise the vat by means of an equalizing bar attached to all four corners. Raising the vat up the regular way, or as explained just before, gives access to the entire plate area. After the man doing the washing is supposed to be done, somebody with a sense of responsibility should inspect the plates to see that all the slots are clear. Capacity can be greatly reduced by neglect of this precaution.

All of the foregoing is very, very elementary. Well, if this war makes everybody see that it is really done in his mill, there is some use for war.

Operation

Perhaps you are pushed for capacity. Or you want to make cleaner pulp. This brings us to methods of operating to get the most out of existing equipment. This requires no priority.

First comes the method of introducing stock into the screen. The idea is to have the stock spread all the way across the first plate. This insures that all this plate is used. If you do this you do not dump the stock onto the plates. Dumping the stock onto the first two plates stops flow through those plates because it breaks the seal.

The use of an approach flow box is one way to insure proper mixing of the stock and white water without cascading. It also insures proper delivery of stock to the screen. One way of admitting the stock to the screen is through the slotted pipe. There are a number of ways to get at the main object, that is, to spread the stock all the way across the screen at the first plate.

On paper machine screens, if the stock is inclined to drain rapidly, it may be desirable to introduce the stock at two points. One of these should be halfway the tailing end of the screen. The object is to maintain low consistency throughout the screening operation. A flat screen acts as a thickener, and stock introduced at a suitable consistency at the beginning of the screen may be too thick to screen properly toward the tailing end.

On a pulp screening operation, it is desirable to introduce additional white water part way through the operation, in order to maintain the desirable consistency.

The reason for avoiding cascading is that cascading causes foaming, increasing any natural tendency for the stock to make foam, by trapping air in the cascade.

One way to get a thinner consistency, especially in a paper machine screen, is to recirculate some of the stock from the tailing or low consistency end of the flow box. There is a difference between the tailing end of the vat where the consistency is thick and the tailing end of the flow box where the consistency is thin. Take some of this fibre bearing water in a small pump and throw it into the approach flow box of the screen. This will keep the consistency through the screen thinner than the consistency of discharge to the wire.

Control of discharge is important to general screen operation. It may not increase capacity, but it tends to use all of the screen, improve dirt removal, and prevent formation of hard lumps. If all the screening is done on the first few plates, the rush of stock through these plates carries a larger percentage of dirt through the slots than would be the case if the screening were spread over more plates and were thus less violent.

This control is secured by increasing the number of points of control on the outlet dams. On single screens for cylinder machine vats, or for fourdriniers, one dam for each two plates is used. On pulp screens a dam for each four plates might be enough.

It is an established principle of screening that the overflow dam can be lowered, with resulting increased rate of flow, as long as enough stock is supplied to the plates to fill the diaphragm chamber. It has also been established, notably by Eckholm, that the greater the flow in gallons, the more dirt goes through. By using more control points on the overflow dams in the flow box, the stock can be worked down to cover, at a uniform depth, all the available plates. In this way each individual plate can be made to pass about the same amount of stock. In addition, where there are dry plates there is a dry diaphragm chamber, and here dry lumps accumulate.

On pulp mill screens the increased number of control points can be used to force each plate to do about the same amount of work with additional resultant capacity.

In the pulp mill, shorter lines for first screening, with provision for tailing screens is recommended. Another recognized principle of screening is that only a percentage of the dirt can be taken out in one screening. If arrangements are made for at least one tailing operation, and for very good operation two, the pulp will be cleaner.

If this requires rearrangement of the screens and additional buildings, so hard to get at this time, it is suggested that you consult your screen manufacturer. He may be able to suggest breaking up of existing lines, and using low powered pumps for transport to sections set off for tailing.

Critical Materials in Screens

Now comes the analysis of critical materials in a screen and what we are going to do when they wear out.

Vats, frames and flow boxes are made of wood, sheet metal or cast metal. All of the following is based on restrictions as they were when I left home. Wood and rodding is, so far, no great problem. It seems reasonable to suppose that there will be no need to replace either sheet iron or cast metal. These are of recent introduction. Should there be such a need, there is still cypress or any wood which will stay together for a while. Frames can also be made of cast iron.

Cast iron end stands and girts present no immediate difficulty.

On shafting one can only pray that a shaft doesn't give out, although we are still able to get what little we need on the A-10.

Steel cams can be replaced with cast iron for the duration.

Wooden toe blocks present no problem.

Steel roller shoes are not likely to be in great demand. They are of recent introduction and screens put out six years ago have not yet required replacement of the roller shoes.

For antifriction bearings on some makes of screens consult the manufacturer. It would seem that for the duration, a properly designed plain bearing lined with Ryertex or Micarta or Panelyte would be adequate. This could probably be designed to conform to the main housing which takes the present antifriction bearing.

Pitmans or connecting links of cast iron present no problem.

Diaphragms have been made from leather. One of the plastic manufacturers encourages us to think that they may be able to recommend something, and when we know for sure we'll pass it on to you. Our development engineer has used new drier felt, three or four thicknesses stitched together all over, and soaked in linseed oil. It is hoped that enough rubber and canvas will be allowed for your needs.

In the case of bronze plates, it would seem that the War Production Board will allow a reasonable quantity to be distributed on some equitable basis, much as they permit the manufacture of paper mill wire cloth. We can't make paper without plates, and there is no substitute in sight which does not involve a material still more critical than brass or bronze.

Keeping plates smooth is important. This is especially true of the slots. There is a special tool which your plate or screen manufacturer can recommend. This is for cleaning slots if they get plugged without damage to the slots.

If you have any spare plates, get your plates rerolled and recut before they have worn to the point where it is impossible.

Brass or bronze plate fasteners of the quick removable plate type are beginning to be something of a problem. Stationary bars might be replaced by tough hard wood, and the spring bars also.

I can imagine steel screws in plastic sockets for holding down the lengthwise battens, but this is just another idea. There has been worked out for one mill the idea of fastening two plates to an oak frame. The eight frames for a sixteen plate screen are held down by a wooden batten lengthwise of the screen on each side. These in turn are held down by cams turning in bushings let into the side of the screen. These cams and bushings should be made of bronze, but for the emergency the bushings could be made of cast iron lined with Ryertex or Micarta or Panelyte or Phenolite—all of these people are friends of ours —and the cam could then be made of cast iron, too, and wouldn't rust fast. I do not say it won't rust, but it can at least be turned.

The brass bushings in roller shoe assemblies can be made of cast iron with Ryertex linings. Lubricating them would be a nuisance but the idea is to keep 'em rolling.

Steel flat springs would be replaced with wood. In many cases they were originally wood. Coiled springs —that's another place where we will have to have the enlightened cooperation of the W. P. B.

Rubber flat belts can be replaced by leather. V belts are hard to get. Thought should be given to what drive changes could be made if they become no longer available, and return to flat belts must be made.

Special care should be taken of screen motors at this time when motors are so hard to get. They should be well covered even if totally enclosed or splashproof.

To sum up briefly—one way or another we can replace most critical materials on a flat screen—and the balance must be released to us if there is to be any pulp or paper. We suggest that you begin now to study your flat screens and treat them the way you always have your fourdrinier. Study operation as you would the formation on the wire or your digester cooking charts. Consult your manufacturer on problems of replacement. He is a storehouse for information accumulated from a number of mills, and at this time there should be no secrets in the trade. Finally, and to conclude, care, study and ingenuity will keep 'em screening even without critical materials.

G. H. Chidester Appointed F. P. L. Pulp and Paper Chief

Gardner H. Chidester, for the past 16 years closely associated with sulphite and semichemical pulping process investigations as a member of the U. S. Forest Products Laboratory's Division of Pulp and Paper, has been appointed chief of that division, it is announced by Director Carlile P. Winslow.

Mr. Chidester came to the Laboratory in 1925 from the editorial staff of Paper Industry, Chicago. Among his first assignments at the Laboratory was a waste survey, carried out in cooperation with a number of paper mills, which resulted in methods of reducing white-water fiber losses. Shortly thereafter, he began his work with semichemical pulping processes, then in the pioneer stage. He participated in the establishment of a semichemical mill for pulping of southern hardwoods, including the gums, at Hartsville, S. C., in 1927, where wrapping paper was produced.

The following year Mr. Chidester began his work on the adaptation of the sulphite process to new species, and growth-quality relationships of pulpwoods. Among his contributions has been a method of recovering soda and sulfur from soda-base sulphite liquor for reuse.

Mr. Chidester succeeds the late C. E. Curran as Chief of the Division of Pulp and Paper.

Currently, the division is occupied with wartime research problems, including the development of substitutes from pulp and paper for critical war materials, diversification of species for pulping, and methods for improving pulp yield.

A native of Hastings, Mich., where he was born in 1897, Mr. Chidester was graduated from the University of Michigan in 1920, where he majored in chemical engineering. For about 3 years thereafter he worked for the Kimberly-Clark Corporation at its mills at Niagara, Wis., and Kapuskasing, Ont., as mill apprentice and later as tour foreman. He then joined the staff of Paper Industry. While attending the University of Michigan he was a member of Alpha Chi Sigma and Phi Lambda Upsilon, chemistry fraternities; Tau Beta Pi, engineering fraternity, and Sigma Xi, scientific fraternity. He is a member of the Technical Association of the Pulp and Paper Industry.

A New Method for Measuring Specific Surface*

By James d'A. Clark[1]

Abstract

A new, rapid, and simple test for measuring the exposed surfaces of pulps, artificial silk fibers, and similar materials, with a fair degree of accuracy (possibly within 5%) is described. The test comprises depositing a continuous film of metallic silver (about 0.1 μ thick) on the surfaces of fibers and fibrils by virtue of their reducing properties, and then measuring the unknown area of the exposed silver quantitatively by its ability to catalytically decompose a dilute solution of hydrogen peroxide under standardized conditions, as against the effect of measurable surfaces, such as silvered cellophane.

The effects of the more important variables were studied and the results may be expressed in the formula $A\,c\,T = f(t)\,(K - \log n)$, *where* A *is the area of the silvered surface being tested,* c *is the concentration of the hydrogen peroxide,* T *is the time of the reaction,* $f(t)$ *is a function of the temperature of the reaction,* K *is a constant, and* n *is the unused hydrogen peroxide after time* T. *Under the conditions adopted,* n *proved to have a linear relation with the temperature from 12 to 37 deg. C.*

A very rapid increase in the specific surface of an unbeaten pulp is shown to occur with a small amount of mechanical treatment. Estimated specific surfaces of a number of common papermaking pulps are given, varying from 6400 to 18,600 sq. cm./g. for unbeaten to about 50,000 for prepared paper machine stock.

Ordinary microscopical measurements of the specific surfaces of artificial silk fibers are believed, as a result of this work, to be too low by a factor of about 2.0 because of submicroscopic surface irregularities.

When the fineness of particles has to be correlated with another property of a substance, it is convenient to have this quality expressed as a single number. The most suitable number for this purpose is usually called the specific surface which, in the case of cellulose or other fibers, may be defined as the externally exposed surface in square centimeters of one gram of dry fiber.

Because papermaking fibers, especially when beaten, have upon their surfaces coarse fibrils and, furthermore, a very fine pile composed of almost ultramicroscopic fibrils *(1)* or possibly even molecules *(2)*, we have the microequivalent of a piece of unshorn velvet cloth with a tufted uneven pile of coarse and fine fibers. The surfaces inside the pile are not exposed in the ordinary sense; nor are any voids in or covered over by the pile a part of the outside surface. This comprises only the externally exposed sides and ends of the fibrils or tufts of micels or the sides of crevices and undulations forming the exterior of the fibrous structure.

* Presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Hotel Commodore, New York, N. Y., Feb. 16-19, 1942.

A portion of a thesis submitted in partial fulfillment of the requirements of The Institute of Paper Chemistry for the degree of Doctor of Philosophy from Lawrence College, Appleton, Wis., June, 1941.

[1] Member TAPPI, Research Associate, The Institute of Paper Chemistry, Appleton, Wis.

Previous Methods of Measurement

From the definition just given, it will be seen that, without hopelessly tedious measurements (indeed if they were possible), the microscope cannot give a true result and published data *(3)* must be regarded as approximate only, tending in all cases to be too low. Even with an artificial fiber, the exposed surface is not at all easy to measure because, besides the easily visible irregularities in the contour of a highly magnified cross section, still finer ones are present.

There has been considerable work done in the cement, mining, and ceramic industries *(4)* on the measurement of the specific surface of powders. Of all these methods, possibly only one is applicable to pulp. This method consists in measuring the obstruction of a parallel beam of light by a suspension of known concentration, when the logarithm of the ratio of the emergent to the incident light is taken as proportional to the fineness of the particles. Maass and others *(5, 6)* have studied this but, unfortunately, the effect of fine or indeed coarse fibrillation does not adequately affect the result. Moreover, both the scattering and absorption of light are affected by the wavelength employed.

Another principle which might be applied to artificial fibers is a determination of the exposed surface by the initial rate of solution in a suitable solvent *(7-9)*. This method does not appear to be workable for natural cellulose fibers because of the heterogeneous nature of the surface. Strachan *(10)* precipitated different positively charged metallic salts, including silver oxide, on the surfaces of pulp before and after beating, and measured the weight or volume of precipitated material adhering to the pulp after washing. Graphs were given showing the quantities of several salts adsorbed during the progress of beating; in general, their shapes conformed remarkably well with those obtained with the present and much more accurate method.

Stamm and Millett *(11)* have determined the internal surface of filter paper or, what is the same thing, the external surface of the fibers less their areas in contact in the sheet, by the adsorption of stearic acid by the paper from a solution of the acid in benzene. A value of 2700 sq. cm./g. was obtained.

Wiggins, Campbell, and Maass *(12)* have studied the application of the Kozeny equation *(13)* to the measurement of the specific surface of copper wire, glass wool, and celanese, and obtained promising results in comparison with microscopic measurements. Sullivan and Hertel *(14)* have succesfully applied this method to cotton fibers. They obtained values of 2300 to 4000 sq. cm./g. for various cottons, these values being based on microscopically determined values of about the same magnitude. Apart from the uncertainty of the microscopic measurements, as has been discussed, it is probable that increased fibrillation, which so markedly increases the exposed surfaces, would not adequately affect the observed values with this method.

Harrison and Purves *(15)*, by forming a thallium compound with exposed hydroxyl groups and then methylating the product, estimated the "effective" internal and external surface of ramie fibers to be 37,000 sq. cm./g. which increases tenfold or more after mercerization.

It may be of interest to observe that, according to the work of Stamm and Millett *(11, 16)* and others *(17, 18)*, the total specific area of pulp—that is, including the intermicellar surfaces—is of the order of one or two million sq. cm./g. This represents the ultimate specific surface if beating were carried out to the limit.

The Value of the Measurement

From this review, it will be seen that no satisfactory method has been provided for measuring the external specific surface of pulp, although for a long time its importance has been realized as being a measure of what is propably the principal physical change caused by beating. Bell *(19)* has rightly stated as regards discussions concerning the nature of beating and hydration "that the issue will not be definitely settled until we have a precise measurement of the changes during beating of the external specific surface of the fiber."

Development of the Present Method

When the work was started, an attempt was made to find a way of applying a uniform coating of some suitable material on the surfaces of the fibers and to measure the exposed area by obtaining the initial rate of solution of the coating. Silver was chosen as the most likely material for the purpose and the first step was the development of a satisfactory method of depositing a continuous and adhering coat on the fibers but meanwhile avoiding formation of unattached silver particles and debris. A number of glass silvering formulas were tried and modified without success. The best results were secured by dehydrating the pulp with alcohol, drying, moistening with a reducing sugar solution, and silvering in the cold with a Rochelle salt-ammonia-silver nitrate solution. A somewhat soft and brittle coating of silver was obtained having in the mass a blue-black, black, dusky green, or dusky yellow color which appeared to be related to the type of pulp—pulps prepared by the alkaline processes being black. A small quantity of silver debris also is deposited with the cold silvering process just mentioned. Any fine debris would clearly be fatal to the accuracy of any method based on the initial rate of solution or on the measurement of the total weight of metal deposited assuming that a uniform and known thickness of silver coat could be formed all over the surface of the fibers.

Fortunately another approach was suggested—namely, the employment of the catalytic action of a silver surface on the decomposition of hydrogen peroxide. This was all the more desirable because experiments subsequently proved that it was not possible to deposit a uniform thickness of silver on different kinds of cellulosic surfaces, because it appeared that the metal would be preferentially deposited first on those fiber surfaces that were the most strongly reducing. When once a deposit had formed, it was found that silver continued to be deposited almost exclusively on the surfaces already covered,

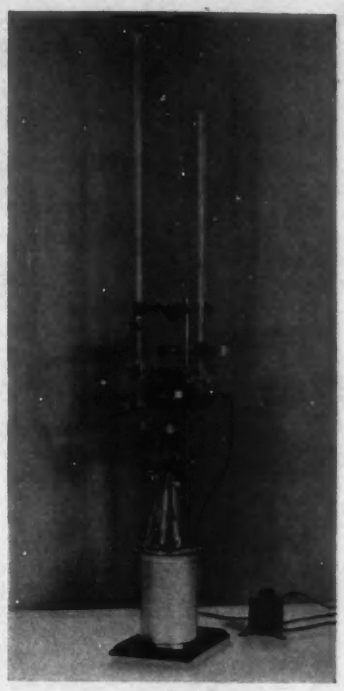

FIG. 2
Specific Surface Reaction Apparatus

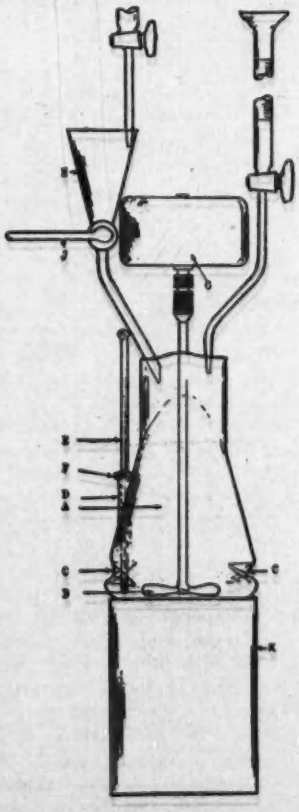

FIG. 1
Specific Surface Reaction Apparatus—Schematic Diagram. A—Reaction Vessel; B—Glass Propeller; C—Indentations; D—Glass Tube to Hold Thermometer in Position; E—Thermometer; F—Washer; G—Motor; H—Funnel; J—Glass Rod; K—Support

which was not entirely prevented even when the concentration of the fibers relative to the silvering solution was made very low.

Action of a Silver Surface on Hydrogen Peroxide

If a silvered fiber is placed in a drop of dilute hydrogen peroxide solution on a slide, a most interesting reaction is visible, which in some ways is quite similar to the phenomenon of boiling. Action commences at once but, depending on the physical condition of the silver on the fiber, the bubbles of oxygen evolved are either small and emanate from over the entire surface or, alternatively, relatively large bubbles come off at one or more focal points on the fiber, usually at an end or at a damaged spot, if the fiber has been bent and broken. Usually, when large bubbles come off, they do not originate on the surface of the fiber, but at an appreciable distance away, often as much or more than the width of the fiber. If the surface of such a fiber be preconditioned by treating it momentarily with strong hydrogen peroxide—e.g., 5% solution—then the form of evolution passes to the extreme, finely dispersed type, and the bubbles come off apparently very close to the surface. Similarly, a new piece of metallic silver foil exhibits a coarse evolution of bubbles; these can be made very small by dipping the foil in nitric acid for a few moments and washing before putting it into the dilute peroxide solution. Several measurements have indicated that, except for silver foil, where the original surface is probably not clean, the rate of evolution of oxygen is exactly the same, whether it comes off in coarse or in fine bubbles. The film of liquid surrounding the fiber seems to become supersaturated with gas, which is evolved more or less uniformly, depending on the presence of sharp points such as are furnished by adding chips to a liquid boiling in a vessel. As the size and uniformity of the bubbles was found in no way to affect the average rate at which the gas is evolved, the analogy with a boiling liquid is complete.

Levi and Haardt *(20)* stated that the rate of decomposition of hydrogen peroxide by fine metallic suspensions is not increased when the particle size is

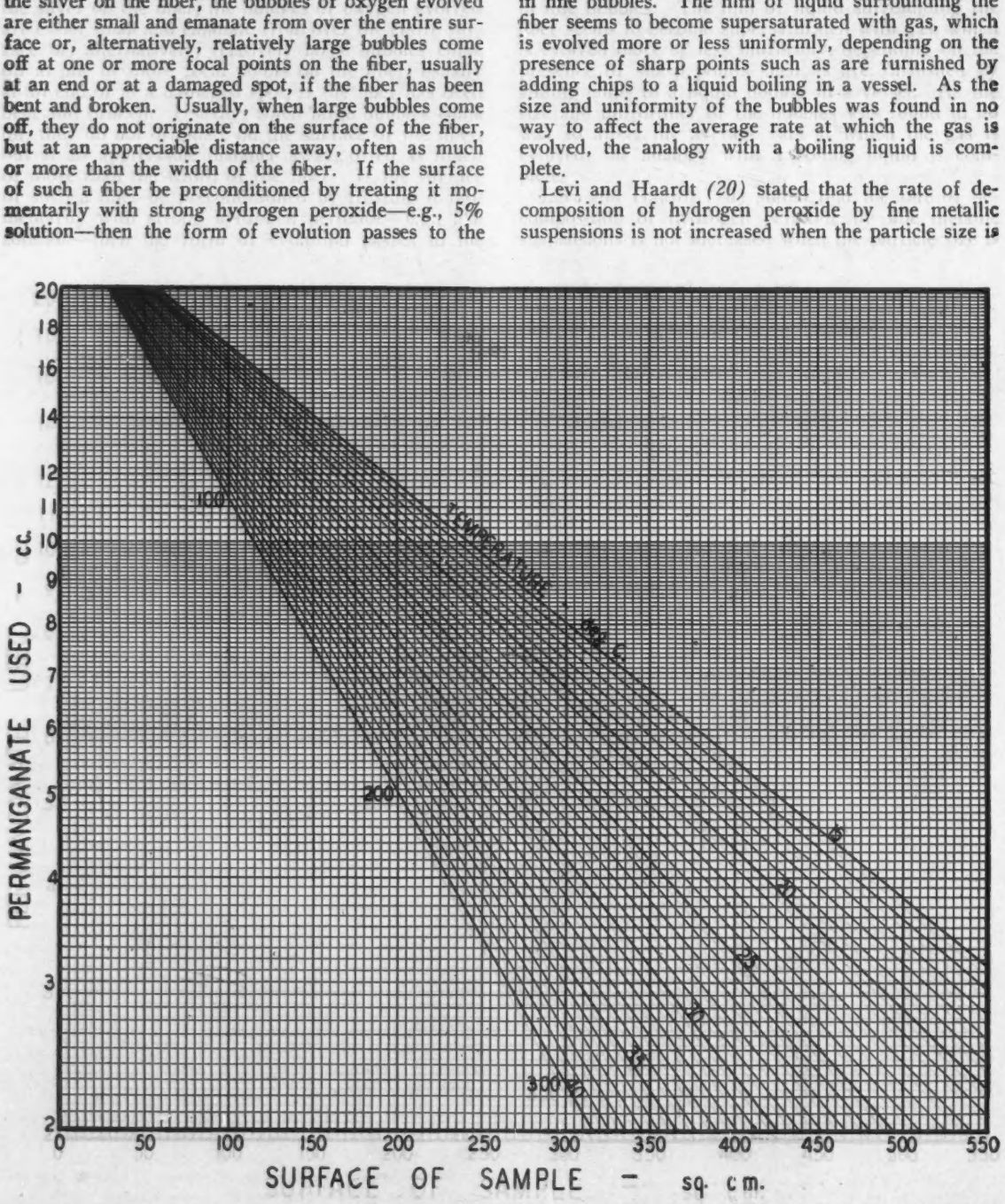

FIG. 3
Calibration Chart for Specific Surface

below that corresponding to 300,000 sq. cm./g. This corresponds to particles having diameters below about one fourth of a micron, so that apparently we can have a condition where, when the particles are small enough, they become enveloped in a protective film of oxygen. It has been observed that, if two small fibers touch, the oxygen invariably issues from only one of them. It seems safe to assume then, that as long as one dimension of a particle or group of contiguous particles exceeds 0.2 μ, the reaction will proceed. Because the fibrils, even if not attached to the fiber, usually are at least 0.2 μ long, it is expected that they should contribute their quota to the over-all catalytic effect. The ineffectiveness of small particles may be the reason for the surprisingly small effect of removing colloidal matter by washing the silvered pulp in a fine porous crucible. In one experiment, the material in the filtrate from 100 mg. of silvered pulp was concentrated by sedimentation. There was enough material present to make the water distinctly turbid, yet a test for area showed the effect to be of the order of only about two per cent of that of the fiber surface.

The chemical nature of the action of silver is not well understood. Cronheim *(21)* has recently reviewed the action of metals and their hydroxides on hydrogen peroxide. Mellor *(22)* noted that many chemicals, including ammonia, cyanides, and sulphuric acid, act as poisons for the reaction and the effects of these and other chemicals, including potassium permanganate (which is employed during the new procedure), were confirmed. Sulphuric acid, however, appears to inhibit the reaction, not by poisoning in the ordinary sense, but by lowering the pH, because the reaction can be started again by adding a suitable alkali. A trace of the others, if added to a suspension of silvered fibers in water, will almost entirely prevent a reaction when dilute hydrogen peroxide is subsequently added.

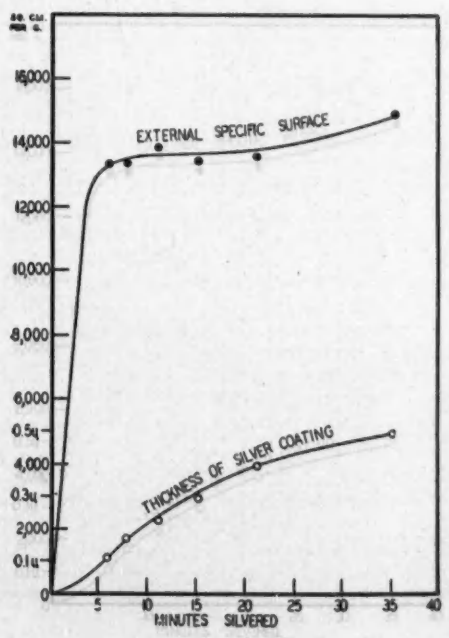

FIG. 4
Influence of Time of Silvering on Surface Test and Thickness of Silver Coating

The New Method of Measurement

A thin continuous film of metallic silver, about 0.1 μ thick, is deposited on all the exposed surfaces of a small (about 100 mg.) representative sample of the pulp by boiling the fibers in about 150 cc. of an ammoniacal silver nitrate solution for 10 to 30 minutes, depending on their reducing properties. The silvering solution is prepared by very carefully adding ammonia to a 4% solution of C. P. silver nitrate until the color of the brown precipitate lightens and just barely disappears. A measured volume of the washed and silvered fiber suspension (containing an accurately known weight of fiber, about 20 mg. or less) is diluted to exactly 100 cc. with distilled water after adding 5 cc. of sodium borate buffer solution (25 grams hydrated sodium borate and 20 cc. *N* sodium hydroxide diluted to 500 cc.)

The fiber mixture is poured into the reaction flask of the apparatus shown in Figs. 1 and 2. Twenty-five cc. of hydrogen peroxide solution, the concentration of which has been carefully adjusted against approximately 0.5 *N* potassium permanganate, is run into the closed addition funnel. The stirrer motor is started and the cock of the addition funnel is opened suddenly, allowing the hydrogen peroxide to run into the flask and a stop watch is started. The hydrogen peroxide is catalytically decomposed in direct proportion to the extent of the silvered surface present. The silver coating remains intact so that the reaction is independent of either the weight or the thickness of the silver deposit.

After about 50 seconds, the thermometer is read and after closing the cock, 15 cc. of 2 *N* sulphuric acid is poured into the addition funnel. At the end of exactly 100 seconds the cock is quickly opened and the reaction is stopped by the addition of the acid to the suspension. The unused hydrogen peroxide is found by titrating the contents of the flask directly with 0.5 *N* potassium permanganate to a faint pink end point. The area of the sample tested is determined by a formula or chart (Fig. 3) which has been prepared for the chosen conditions of the method by applying the identical procedure to finely cut cellophane sheets of known area.

The specific surface is obtained by dividing the area so found by the weight of the sample. Because of the danger of catalytic poisoning, care must be taken to have all parts of the equipment scrupulously clean.

Experimental

Brief descriptions of several of the more informative and interesting experiments carried out during the course of this work are presented herewith.

Effect of Time on Silvering Pulp

Fifty mg. portions of unbeaten unbleached Mitscherlich sulphite pulp were silvered for progressively increasing times with 150 cc. of boiling ammoniacal silver nitrate solution. The fibers became yellow in a few seconds, light brown at the end of one minute, red brown after two minutes, deep brown after three minutes, chocolate at four minutes and, apparently, quite black at the end of six minutes as light coming through the suspension no longer reflected a brownish tinge. Silvering of individual samples was continued up to 35 minutes.

After testing each sample of pulp for area according to the method described, concentrated nitric acid was added to the reaction mixture and the amount of

silver present was determined by titrating the solution with 0.1 *N* potassium thiocyanate, using ferric ammonium sulphate as an indicator. One cc. of 0.1 *N* potassium thiocyanate is equivalent to 0.00103 cc. of silver metal. Knowing the exposed area, the thickness of the silver coat can be calculated. The results are plotted in Fig. 4.

It will be seen that once the pulp has become black, there is only a minor increase in the measured specific surface even though the pulp has been silvered six times longer than was necessary. Indeed in this case the fibers became quite brittle after silvering for 20 minutes and very brittle, silver gray, and powdery after 35 minutes. By using a fine filter for the washing, almost all the fine fragments were retained to contribute their quota of area to the results. The loss of any fine particles through the filter probably compensates to some extent for the increase in the exposed surfaces brought about by a thickening of the fibrous structure caused by the deposition of the silver.

Silvering of Rayon Filaments

Three samples of different rayons were examined. Careful measurement of their average perimeters were made by projecting their cross sections to 1000 diameters. Knowing their titers (i.e., filament lengths per gram), specific surfaces of samples of nitrate, acetate, and viscose rayons were calculated to be 1250, 1690, and 2220 cc./g., respectively. Repeated tests with these rayons with the new method (after cutting them into short lengths) indicated specific surfaces of 2450, 3050, and 4200 sq. cm., respectively.

These discrepancies caused an extensive search to reconcile the two sets of figures. It was finally concluded that submicroscopic wrinkles must exist in the structure, because of the great shrinkage of the fibers (about 96%) from their original cross section during their manufacture. A careful examination of the surface of the filaments with indirect lighting proved this to be the case and, thus, an actual increase in the measured area by a factor of about two is very probably correct. This assumption was confirmed in part by silvering a sample of the same viscose rayon for a period of three hours until the filaments resembled very fine, frosted silver wire. The measured specific surface then decreased from 4200 to 2640 sq. cm. which indicated that many of the irregularities had been filled in by the silver and the specific surface was now actually smaller in spite of an increase in the diameter of the filaments by 2 or 3 μ.

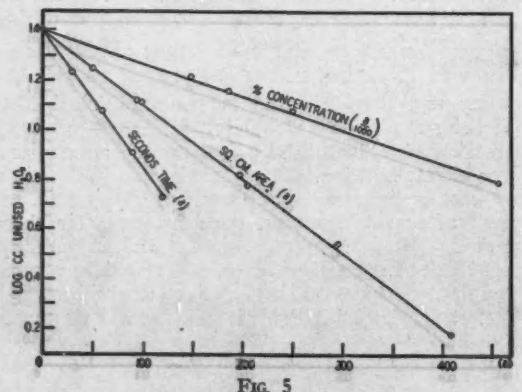

Fig. 5

Effect of Time, Area, and Concentration on Reaction of Hydrogen Peroxide

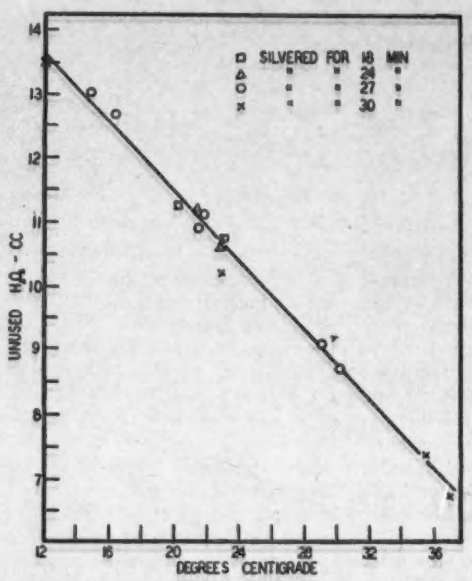

Fig. 6

Effect of Temperature on Reaction with Hydrogen Peroxide

Using a different procedure, the correctness of the new measurement was further indicated by silvering a sample of the rayon together with half-inch squares of cellophane which had a measured exposed surface of 91 sq. cm. Before doing this, it was found necessary to treat both materials with 1:3 nitric acid to render their surfaces equally susceptible to silvering. After silvering, the squares and fibers were separated by washing and the silver was dissolved off each with nitric acid and then titrated with potassium thiocyanate. Knowing the exposed area of the squares, and assuming an equal thickness of the silver deposit on each surface, the specific surface of the viscose silk was found to be 3900 sq. cm./g. This compares quite favorably with the figure of 4200 sq. cm. as determined by the new method.

Effect of Time, Concentration, and Area of the Sample on the Reaction with Hydrogen Peroxide

Several sets of small squares of cellophane (3 or 4 mm. across), having different and accurately measured areas (including the edges), were silvered and tested for surface. On plotting the logarithm of the unused quantity of hydrogen peroxide left in the reaction vessel after the chosen period against the area of sample as in Fig. 5, it will be seen that a fair straight line results. This straight-line semi-logarithmic relationship was found to hold true in many subsequent experiments.

Equal portions of a silvered pulp were tested under the same conditions but allowing the reaction to proceed for various times. On plotting the logarithm of the unused quantity of hydrogen peroxide at the end of each chosen period against time, it will be seen from Fig. 5 that another straight line is obtained.

Using equal quantities of the same silvered pulp as before and keeping constant the reaction time and the quantity of hydrogen peroxide employed, but varying the volume of liquid in the reaction vessel, the logarithm of the unused hydrogen peroxide at the end of the reaction period and the concentration of the hy-

drogen peroxide before the reaction, also gives a straight line (Fig. 5).

From these experiments we conclude that

$$A\ c\ T = f(t)\ (\log 25 - \log n), \qquad (1)$$

where A = area of the silvered surface tested,
c = concentration of hydrogen peroxide,
T = duration of the reaction,
n = volume of unused hydrogen peroxide, and
$f(t)$ = coefficient dependent on temperature.

If c and T are fixed, as in the adopted method, then

$$A = f(t)\ (\log 25 - \log n) \qquad (2)$$

Effect of Temperature on the Reaction

A number of sets of cellophane squares were cut so that the exposed surface of each set (including the edges) were constant at 200 sq. cm. These were silvered for various times, although the squares became perfectly black in about nine minutes. Before testing each set, the temperature of the reaction was changed by either cooling or warming the reaction vessel and its contents.

When the volume of unused hydrogen peroxide is plotted against the reaction temperature (Fig. 6), it will be seen that a fair straight line results, and that, for every degree centigrade rise in temperature, the volume of unused hydrogen peroxide at the end of the 100-second reaction period decreases by approximately 0.273 cc. It also will be observed that the thickness of the silver coating (varied by the time of silvering) does not appreciably affect the results.

From the previously derived Equation (2),

$$f(t) = A/(\log 25 - \log n).$$

From this experiment $n = n' - 0.273\ (t^\circ - 20)$, where n and n' are the number of cc. of unused H_2O_2 if the test were carried out at t and 20 deg. C., respectively.

Thus,

$$f\ (t) = A/[\log 25 - \log (n' - 0.273\ (t - 20^\circ))] \qquad (3)$$

Effect of the Size of the Cellophane Squares Used for Calibration

Subsequent to the work described in this paper, McEwen *(23)*, in carrying out some experiments with this method, found that the cut size of the cellophane squares used for calibration had an appreciable influence on the result and, as the size was made progressively smaller, their effect on the reaction increased. On plotting these two variables, a curve was obtained which became asymptotic when the squares became very small. A possible explanation when the squares are relatively large—over one millimeter—is that as they are stirred in the reaction vessel, the surface on the trailing side tends to become temporarily oxygen-bound because, as the gas is formed, it is not effectively swept away.

From the data found by McEwen, and from the average size of squares used in the preceding experiment (about 2.5 x 2.5 mm.) when applied to small squares or to fibers, instead of an area of 200 sq. cm. being equivalent to 11.55 cc., the actual surface of fibers necessary to give this amount of reaction under the chosen conditions at 20 deg. C. would be 12.0% less than this, or 176 sq. cm.

Substituting these values in Equation (3)

$$f(t) = 176/[\log 25 - \log (11.55 - 0.273\ (t^\circ - 20))] \qquad (4)$$

Substituting this value of $f(t)$ in Equation (2)

$$A = 176\ (1.398 - \log n)/[1.398 - \log (11.55 - 0.273\ (t^\circ - 20))] \qquad (5)$$

where A = area of sample in sq. cm.,
n = ml. of unused hydrogen peroxide, which is equivalent to the cc. of potassium permangante used in the titration, and
t° = average temperature of the catalytic reaction in degrees C.

This formula is plotted as a chart in Fig. 3.

Effect of Silvering on the Dimensions of Cellophane Sheet

A 10 by 10 cm. sheet of cellophane (measured dry) was found to be 10.25 by 10.6 cm. after wetting. After warming in water to 93 deg. C., it shrank to 10.1 by 10.4 cm. and did not change after boiling for 3 minutes. It was transferred to boiling silvering solution. When it had turned a translucent chocolate, it measured 10.0 by 10.35 cm. and when fully silvered and wet it had shrunk further to 9.9 by 10.2 cm. An-

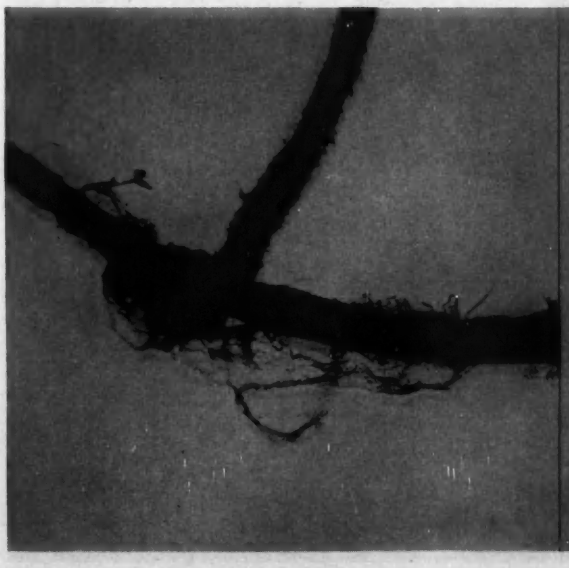

Fig. 7
Bleached Sulphite Pulp after Two Hours' Disintegration and Partial Silvering

Fig. 8
Unbeaten Bleached Sulphite Pulp

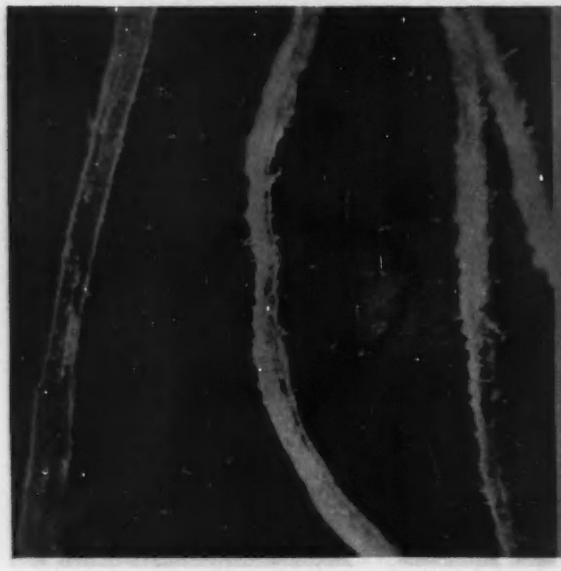

FIG. 9
Bleached Sulphite Pulp—Beaten 4 r.p.g.

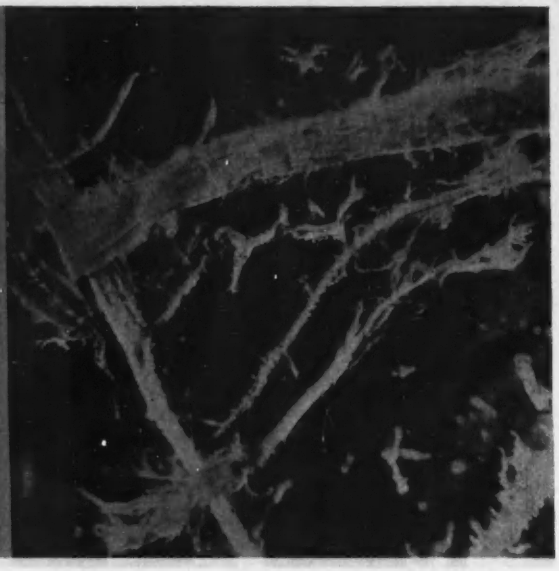

FIG. 10
Bleached Sulphite Pulp—Beaten 64 r.p.g.

other piece while still wet measured 9.9 by 10.1 cm. after silvering.

This experiment validates the dry measurement of the exposed areas of the cellophane sheets as being a fairly good basis of comparison for use with the new method.

The shrinkage of the sheet on warming probably is caused by dehydration. The further shrinkage on silvering is assumed to be caused by further dehydration and possibly also by the mutual molecular attraction of the particles of the deposited silver. When dried, the sheets mentioned above shrank to 8.6 by 8.9 cm. and exhibited perfect silver mirror surfaces.

The method gave fairly good checks on squares of silver foil (within 4%) but only after cleaning the foil with nitric acid. Repeated tests on the same squares became progressively lower, possibly caused by poisoning or impurities. Acetate sheeting also was used as a check. These results were somewhat uncertain, probably caused by partial saponification by the alkaline solution during silvering, and the formation of ammonium acetate. This apparently tended to migrate from the body of the sheets and poison the surface. A series of four successive tests on the same sample (200 sq. cm. measured dry) gave 117, 223, 197, and 180 sq. cm.

While neither the silver foil nor the acetate sheeting gave satisfactory tests, the results are in fair agreement with the established calibration. Silvered cellophane sheets used as standards in the method may be retested several times (as long as they remain completely covered with silver) without showing any change in their effectiveness.

TABLE I

Pulp	sq. cm./g.
Southern pine kraft, unbleached, unbeaten	6400
Rag halfstuff	7900
Southern gum sulphate, bleached, unbeaten	9400
Swedish sulphite, unbleached, unbeaten	12000
Mitscherlich sulphite, unbleached, unbeaten	10300
Disintegrated, 20 min.	13700
Fine groundwood	18600
Commercial stock, Sulphite-groundwood mixture (beaten)	31000
Same, from machine headbox (containing white water)	47000
West coast sulphite, bleached, unbeaten	8800
West coast sulphite, beaten 4 r.p.g.*	10700
West coast sulphite, beaten 8 r.p.g.	12100
West coast sulphite, beaten 32 r.p.g.	13600
West coast sulphite, beaten 64 r.p.g.	17200

* r.p.g. refers to revolutions per gram, a unit of beating, in the Clark laboratory kollergang.

The External Specific Surfaces of Miscellaneous Pulps

Some of the results obtained with the new method are shown in Table I.

Figure 7 is a photomicrograph of two west coast bleached sulphite fibers after disintegrating for about 2 hours, then lightly silvering. It shows clearly the primary wall or skin containing impressions of the pit membranes being unravelled.

Figures 8, 9, and 10 show the same sulphite after beating for 0, 4, and 64 r.p.g., respectively (corresponding burst factors 10.0, 21.7, and 40 g./cm²/m.²)[3] and after having been completely silvered and ready for the specific surface test.

The application of this method to an evaluation of the various ideas advanced to explain the phenomenon of beating will be discussed in a later paper. In the meantime, however, attention is invited to the presence of the extremely fine fibrils even on unbeaten fibers as was claimed by Strachan *(1, 11)* and which has long awaited confirmation, and also to the very rapid increase in the specific surface of pulp after being mildly treated, corresponding to the accompanying rapid increase in strength.

[3] These values multiplied by 2.0 give the burst factors on the basis of points Mullen per lb. with a basis weight of 25x40—500.

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Hydrogen Ion Control System on Cylinder Machines*

By Glenn Sutton[1]

There are many factors in the various phases of papermaking that affect the hydrogen ion concentration (pH), and there are many advantages to be gained by the proper control of pH. In this paper, some of the advantages of pH control are pointed out and some of the difficulties encountered when the acidity or alkalinity are not at the optimum are discussed.

Advantages of pH Control

Some of the advantages to be gained by the control of pH are:

1. Better uniformity of sheet
2. Better printing surfaces on paperboard
3. Better finish
4. Better folding sheets
5. Permanency of sheet
6. Retention.

Better Uniformity of Sheets

I believe the last few months have been more or less trying times for all of us, in making or duplicating a sheet that we made in the past with altogether different stocks than we had on the previous runs, brings out very clearly the advantages of pH control. As we all know, especially those using some reworked stocks, there is no quick way of telling the nature of the stock before using it. This also is true of virgin pulps, as we all know they come in to us today with larger variances than we ever had before. All of these factors tend to create a large variation in your finished paperboard. Therefore by controlling pH you have a better advantage of overcoming the above-mentioned variations. We also have found a decided advantage in controlling color and brightness with pH control.

Better Printing Surface on Paperboard

We have found that we get a better printing surface as it is not necessary to run as low a pH on the majority of sheets. A sheet with a slightly higher pH does not seem to be as hard on printing plates and I do not believe that you have to use as much pressure on printing presses to get a satisfactory printing job. In a majority of cases one can control the curl of paperboard more readily with a higher pH, which in turn would cause less trouble on the automatic feeders by having a sheet that will lay more flat.

Better Finish

The reason for my mentioning a better finish is that the softer a sheet is made, the easier it is to get a satisfactory finish. Therefore, well-controlled pH makes it possible to get a better finish or printing surface due to being able to run your pH slightly higher.

Better Folding Sheet

If you can run your pH higher and get a satisfactory printing surface it is bound to help the folding quality due to your sheet not being so hard. I also believe the fold will stand longer for we all know that a sheet may have a good fold when manufactured but after standing awhile will have a tendency to get slightly brittle. It has always been a thought of mine that this was caused to a certain extent by too low an acid condition of the paper at the time it was manufactured. This item, I believe, will stand considerable discussion.

Permanency of Sheet

We have made several experiments on the permanency of paperboard with a low pH and a high pH on different occasions and find that the hit and miss method will definitely brittle and discolor considerably faster than a sheet run at a proper pH.

Retention

I have read many articles which have been written regarding retention, but from my personal experience I cannot agree 100% with most of them. The only advantage that I have seen that has led me to believe that the retention might be better, is that by adding some of the alum closer to the machine on any white-lined sheet they seem to have a little better color. As far as fillers that might be used, we have had no tests made in order to compare the ash of an uncontrolled and a controlled sheet. Also, I have not been able to notice any difference in felts or cylinders filling up, which, if the retention is greater, should show a noticeable difference in this respect. This phase also will stand considerable discussion.

* Presented at the Annual Meeting of the American Pulp and Paper Mill Superintendent's Association, Grand Rapids, Mich., June 16-18, 1942.

[1] Sutherland Paper Co., Kalamazoo, Mich.

Control Method

There may be more than one automatic pH control system on the market but we have recently installed the automatic Micromax pH control system manufactured by Leeds & Northrup Company, which performs three functions—measures pH continuously, indicates and records it, and controls addition of alum—all of which center in a thoroughly standardized recording controller.

The measuring circuit of the instrument connects through electrical conduit to a pair of electrodes so mounted as to dip into a continuously flowing sample of stock from the mixing box or white water from fan pump. Both a continuous indication and continuous record of pH are provided. A prominent pointer aids in effcient operation by showing immediate pH condition.

The equipment which we have installed consists of four parts: electrode assembly, controller, relay, and motor-driven valve. We have tried this unit at various places between the jordans and machine vat and found in our particular instance, that adding the alum between the stock distributing box and the screen has worked out best. We take our sample of white water directly from our fan pump. I have heard of other installations being connected differently than our setup and have been told that they worked very satisfactorily.

We also have found that we get better results by adding part of our alum at this point and the balance in the beater. We do not seem to get as bad a foaming condition at our screens and vats as we did when we put it all in at the above point.

Up to this time we have no definite figures with regard to costs, but my estimation would be that we are going to show approximately 10% reduction in alum costs.

Saving Fourdrinier Wires

Saving Fourdrinier Wires is the title of the second monograph issued by the Technical Association of the Pulp and Paper Industry. It was prepared as an emergency contribution to the war effort to point out ways to get the most use from paper machine wires and in prolonging their life to reduce the industry's need for copper and tin, so urgently needed by the armed forces.

The 21-page monograph was prepared by J. E. Goodwillie whose services were loaned to the Technical Association by the Beloit Iron Works. Mr. Goodwillie immediately enlisted the guidance of a number of particularly competent papermakers whose years of experience had taught them the technique of getting the most out of wires and keeping them mechanically fit for unusually long periods of time under severe service.

Having prepared his first draft, Mr. Goodwillie read it in detail to a group of well known papermakers at the TAPPI Superintendents joint convention at Syracuse, N. Y., in May. These men devoted nearly six hours to a careful consideration of the subject and it was felt by all concerned that a thorough and careful job had been done, so well in fact that it was further decided to include the report in the TAPPI Monograph Series, to follow the Association's fine monograph on industrial water.

As a further contribution to the paper industry copies of the Wire Monograph have been sent to all members of the Technical Association and were distributed to those who attended the annual meeting of the Superintendents Association, recently held in Grand Rapids, Mich.

It is now the objective of TAPPI to get a copy of Saving Fourdrinier Wires into the hands of every machine tender, operator and engineer who has occasion to handle fourdrinier wires—the men who change the wires and those who run the machines. Copies will therefore be sent on request to any company operating fourdriniers. (There will be no charge for this service, although voluntary contributions to cover cost will be acceptable. The cost to the Association of each monograph is about 15 cents.)

Requests for copies should be sent to R. G. Macdonald, secretary, Technical Association of the Pulp and Paper Industry, 122 East 42nd street, New York, N. Y.

1941 Bibliography of Papermaking

The Technical Association of the Pulp and Paper Industry has recently issued its Bibliography of Papermaking and U. S. Patents for 1941, a cloth-bound volume of 203 pages. As in past years this book has been prepared by Clarence J. West of the Institute of Paper Chemistry, one of the leading bibliographers in the United States.

The thoroughness with which Dr. West prepares a publication of this kind gives the book a high authoritative standing and usefulness. Due to the War conditions it is not complete but this shortcoming will be made up in future bibliographies when the publications now not accessible become available. The present volume, in itself, makes up for some of the deficienices of the 1940 Bibliography but when it is possible to do so the record will be made complete and thereby maintain the reputation of the Technical Association in offering the only complete record of its literature since 1900—a record not approached by any other industry.

Copies of the Bibliography have been sent to members of the Technical Association. Others may obtain copies at $3.00 per copy from R. G. Macdonald, Secretary of the Technical Association of the Pulp and Paper Industry, 122 East 42nd Street, New York, N. Y.

TAPPI Notes

Plans are progressing for the fall meeting of the Technical Association of the Pulp and Paper Industry to be held at the Statler Hotel, Boston, Mass., on September 29-30 and October 1st. Technical conferences of this type are being advocated by the Government authorities since they have a direct bearing on the conservation program in the war effort.

J. R. Arthur is now chemist at the Maxwell Paper Company, Franklin, Ohio.

Robert M. Gavin, formerly of Beach and Arthur Paper Company is now board mill superintendent for B. F. Nelson Mfg. Company, Minneapolis, Minn.

L. J. McNamara, formerly of the Pulp and Paper Manufacturers Association is now Director of Industrial Relations, Rhinelander Paper Company, Rhinelander, Wis.

Henry Perry of the J. P. Lewis Company, Beaver Falls, N. Y., has succeeded R. F. Huntley of the Sealright Company as Chairman of the TAPPI Mechanical Pulping Committee.

IMPORTS OF PAPER

NEW YORK IMPORTS

WEEK ENDING JUNE 27, 1942

SUMMARY

Cigarette paper ..... 265 cs.
Newsprint ..... 3,207 rolls

CIGARETTE PAPER

——, ——, ——, 265 cs.

NEWSPRINT

——, ——, ——, 2501 rolls.
——, ——, ——, 325 rolls.
——, ——, ——, 381 rolls.

RAGS, BAGGINGS, ETC.

S. Freedman, ——, ——, 10 bls. rags.
L. Tulsin & Son, ——, ——, 22 bls. rags.
——, ——, ——, 2368 bls. cotton linters.
——, ——, ——, 425 bls. cotton linters.
——, ——, ——, 255 bls. old bags.

BONES

Rogers Manfg Co., ——, ——, 1028 bags.
Hafleigh & Co., ——, ——, 1241 bags.

FLESHINGS

Universal Commercial Corp., ——, ——, 22 bls.

GLUE STOCK

Universal Commercial Corp., ——, ——, 11 bls.
C. M. Loeb Rhoades, ——, ——, 108 bls., 50 bags.
Darmstadt, Scott & Courtney, ——, ——, 54 bls.

CASEIN

The Button Corp. of America, ——, ——, 50 bags (rennet).

WPB Issues Paper Amendment

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 29, 1942—Paper, paper board, paper products, waste paper, and ilmenite, which is a source of titanium pigments, have been removed from the inventory restrictions of Priorities Regulation No. 1 and all other WPB orders by amendments to General Inventory Order M-161, issued today by the Director of Industry Operations.

The action with respect to paper and paper products was taken to permit building up to inventories this summer in anticipation of a transportation shortage next fall and winter. The inventory exemption with respect to paper board and paper products will expire September 30, 1942, while the exemption with respect to waste paper will continue in effect until revoked.

The Containers Branch of the War Production Board says that no restrictions on the manufacture of any type of paper board box are at present contemplated by the branch, and manufacturers are urged to accumulate needed supplies now in order to avoid possible shortages due to possible transportation difficulties later.

Removal of restrictions on inventories of ilmenite is for the purpose of permitting purchasers of titanium pigments to fulfill commitments made last year in accordance with a directive from Donald M. Nelson, issued last year, requiring the National Lead Company to offer part of its expected ilmenite production from its Essex County, New York, mines to other producers of titanium pigments. The company's development at Tahawus, New York, is expected to start production of ilmenite in the near future, and will produce all that is needed in the United States. Inventory restrictions on this material are therefore unnecessary.

Addition of waste paper to Schedule A of General Inventory Order M-161, which removes inventory restrictions on all materials included in this schedule, makes General Inventory Order M-129 on waste paper unnecessary, and M-129 is therefore revoked.

Eastern Closes Orono Mill

BANGOR, Me., June 29, 1942—The paper mill of The Eastern Corporation at Orono, Me., known for many years as the Orono Pulp and Paper Company mill, closed operations on June 13.

President Morgan stated that the step was taken with regret but was a necessary one as the plant was too high class for the work now being carried on there. The orders that are now being handled at Orono will be filled from the Eastern Corporation mill at South Brewer.

The Orono Pulp and Paper Company was incorporated in 1889 with B. B. Thatcher as president, R. W. Sawyer, treasurer and Mr. Thatcher, Edward Stetson and J. Fred Wegster as directors. Charles Sawyer was the operating manager. The mill was built primarily to use up the waste from the James Walker lumber mill and for a time was leased to a corporation known as the Bangor Pulp and Paper Company operated by men from away who were unable to handle the property to advantage and the mill reverted to its original owners. It was for many years operated successfully under the presidency of the late Charles F. Bragg, making various grades of paper. Mr. Bragg was followed as president by his son Franklin E. Bragg.

In 1930 the property was sold to the Eastern Corporation and has since been operated by that company.

Kaolin Production in Sweden

[FROM OUR REGULAR CORRESPONDENT]

Approximately 16,000 metric tons of kaolin is the estimated annual production of the Caolin Syndicate, founded in 1941 at Fyledalen, Sweden, says a report to the Department of Commerce. At Sjobo, plants have been erected and equipment installed for the extraction of kaolin from the quartz sand deposits. Another company, also operating in the southeastern part of the Province of Skane, normally produces 5,000 tons of kaolin per annum.

Tests indicate that the kaolin at Fyledalen has nearly the same qualities as that imported from England, which was Sweden's chief source of kaolin before the war. Annual consumption of Swedish paper industry has reportedly been some 40,000 metric tons, some of which was imported from the island of Bornhom, Denmark, from Germany, and Czechoslovakia.

Adopts War Production Slogan

In a contest recently conducted in the Ansonia and Derby plants of Farrel-Birmingham Company, Inc., the committee of judges, consisting of plant employees, selected as a wartime slogan for these two plants, "Farrel Drives for Victory," submitted by Jeanette Larson, office secretary.

This slogan was chosen because it expresses the thought that in building *drives* for Navy, Maritime Commission and other ships these workers contribute to the nation's *drive* for victory.

New York Paper and Pulp Market Review

Paper Market Reported Adversely Affected By Conservation Drives — Pulp Market Steady With Prime Grades Scarce — Waste Paper Prices Are Soft and Nominal — Scrap Bagging Is Less Active.

Office of the PAPER TRADE JOURNAL,
Wednesday, July 1, 1942

Demand in the wholesale paper market is less active in many grades at this date. Some reports received from many manufacturers' representatives, jobbers, and general paper merchants reflect concern at the decline in consumption. Many express the belief that the paper conservation publicity and save paper drives have been carried to a greater length than the situation warranted. The public response to the government's plea for thrift and economy has been most gratifying. Unfortunately, there has been no actual paper shortage and it is equally unfortunate that the public continues to believe that there is not enough paper available for all reasonable, normal requirements.

Paper production for the week ended June 20 was estimated at 86.9%, compared with 99.0% for 1941, with 93.1% for 1940, with 79.2% for 1939, and with 67.7% for the corresponding week for 1938.

Paper board poduction for the week ended June 20 was 69.0%, compared with 88.0% for 1941, with 79.0% for 1940, with 79.2% for 1939, and with 59.0% for the corresponding week for 1938.

Domestic paper production for the first quarter of 1942, all grades, including paper board, totaled 4,047,752 tons, compared with 3,362,161 tons in the like period for 1941. Output for March, 1942, was the high peak, with 1,372,369 tons, compared with 725,465 tons for the like month in 1941.

Wood Pulp

Domestic production of wood pulp, all grades, for the first 1942 quarter totaled 2,438,028 tons, compared with 2,091,801 tons for the like period in 1941.

Stocks of pulp on hand, all grades, for the first 1942 quarter totaled 118,907 tons, compared with 161,799 tons for the first quarter of 1941.

Rags

Mill buying of mixed rags is reported less active at this date. The roofing grades are steady under apparent mill buying for laying in adequate supplies pending possible transportation difficulties in the future. Ceiling prices are well maintained on roofing rags, with other rag prices soft.

Old Rope and Bagging

No important change is reported in the old rope market this week. Supplies of old No. 1 Manila are moving steadily at the ceiling price.

Trading in scrap bagging is less active under ceiling prices, established by Amendment No. 6 to the General Maximum Price Regulation, now in effect.

Old Waste Paper

The old waste paper market continues slow. Reports indicate decline in collections continues, with little buying in prospect during the customary fortnightly closing of board mills on July 4th. Prices are nominal.

Twine

No important change in the market situation in twine has been reported this week. Most reports indicate ceiling prices are well maintained.

WPB Forms Wire Cloth Committee

WASHINGTON, D. C., July 1, 1942—The War Production Board has announced the following pulp and paper wire cloth manufacturers industry advisory committee:

W. A. Kelley, Chief, Pulp and Paper and Printing and Publishing Machinery Section, is Government Presiding Officer.

Committee Members are: P. J. Abendroth, general manager, International Wire Works, Menasha, Wis.; William E. Buchanan, president, Appleton Wire Works, Appleton, Wis.; A. F. Crossman, president, Lindsay Wire Weaving Company, Cleveland, Ohio; Guy A. Disbro, general sales manager, W. S. Tyler Company, Cleveland, Ohio; Edward Docherty, general manager, Holyoke Wire Cloth Company, Holyoke, Mass.; Peter S. Sinclair, president, The Sinclair Co., Holyoke, Mass.; Harry C. Specht, general manager, Eastwood-Nealley Corp., Belleville, N. J.; John D. Watson, president, Wisconsin Wire Works, Appleton, Wis.

International Closes Orono Mill

ORONO, June 29, 1942—The Orono branch of the International Paper Company, which has been making wallpaper, will close on Saturday for an indefinite period according to a notice posted on the mill's bulletin board Monday afternoon. The officials at the mill have no further information to give the employees, but it is understood that both the pulp and paper mills will close.

It is expected the machine shop, which employs five men on defense work with Floyd Scammon in charge, will continue to run, but the remainder of around 200 employees will have to seek other employment.

L. B. Tewksbury Attends Yale Reunion

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., June 29, 1942—L. B. Tewksbury, president of Spaulding & Tewksbury Company, Inc., box board dealers, enjoyed a four days' celebration at the fortieth reunion of his class, 1902, held at Yale University.

N. S. Board Mills Close for Week

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., June 29, 1942—Nearly all the box board mills in New England closed June 27 until July 6, inclusive, for the annual vacation, for repairs and general overhauling of machinery.

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Chlorine

The addition of sodium metasilicate recently has been suggested as a means of increasing the bleaching ... of chlorine in sulfite pulp, ... to the Bureau of Mines. It is claimed that 15 to 40 percent of the chlorine required for bleaching may be saved by adding 0.5 to 1 percent of hydrated sodium metasilicate, based upon the dry weight of the pulp.

These possible savings are especially important at ... when the ... of chlorine are urgently needed for war industries. Moreover, the increased efficiency of chlorine bleach will be most welcome to peacetime industry in reducing the cost of bleached pulp and paper. It has been found, however, that sodium metasilicate does not act as efficiently on such other types of pulp as sulphite pulps or soda pulps. Research work indicating the fundamental reason for the action of the silicate may lead to methods of improving the bleaching efficiency of chlorine in other pulps than the sulphite type.

Due to the current shortage of chlorine, WPB is urging all producers of bleached pulp to make due allowances in preparing their schedules of tonnages to be bleached monthly in connection with Order M-93.

The 1941 production of chlorine has been estimated at about 725,000 tons, indicating a marked increase over the 1940 production, estimated at 650,000 tons. It is expected that further expansion of chlorine output will be effected during the next few years to meet the demands of the enormously expanded synthetic rubber program and other war industries.

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REG. U. S. PAT. OFF.

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MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL
Wednesday, July 1, 1942

BLANC FIXE—Quotations on blanc fixe are firm and continue unchanged at prevailing market levels. The pulp is currently quoted at $40 per ton in barrels, at works; the powder is offered at $60 per ton, f.o.b., works. Demand reported fair for the week.

BLEACHING POWDER—Prices on bleaching powder are firm. Demand reported fair for the week. Bleaching powder is currently quoted at $2.25 per 100 pounds, in drums, at works.

CASEIN—Quotations on casein are lower for the week. Standard domestic casein, 20-30 mesh, is currently quoted at 16½ cents per pound; 80-100 mesh at 17 cents per pound; all prices in bags, car lots. Standard Argentine casein is currently offered at 14 cents per pound. No quotations on French casein.

CAUSTIC SODA—Prices of caustic soda are reported firm and continue unchanged. Demand moderate for the current week. Solid caustic soda is currently quoted at $2.30 per 100 pounds, flake and ground at $2.70 per 100 pounds, in drums, at works.

CHINA CLAY—Quotations on china clay are firm and continue unchanged. Demand reported fair for the current week. Domestic filler clay is currently quoted at from $7.50 to $15 per ton; coating clay is quoted at from $12 to $22 per ton, at mines. Imported clay is quoted at from $13 to $25 per long ton, ship side.

CHLORINE—Quotations on chlorine unchanged. Government demand for war use continues very heavy. Chlorine is currently quoted at from $1.75 per 100 pounds, in single-unit tank cars, f.o.b., works.

ROSIN—Quotations on some grades of rosin are higher for the current week. "G" gum rosin is currently quoted at $3.13 per 100 pounds, in barrels, Savannah. "FF" wood rosin is currently quoted at $3.10 per 100 pounds in barrels, New York. Seventy per cent gum rosin size is quoted at $3.43 per 100 pounds, f.o.b., works.

SALT CAKE—Prices on salt cake are firm. Demand reported fair for the current week. Domestic salt cake is currently quoted at $15 per ton in bulk; chrome salt cake at $16 per ton. All prices in car lots, f.o.b., shipping point. Quotations on imported salt cake are nominal at $16 per ton.

SODA ASH—Quotations on soda ash are firm and continue to conform to prevailing market quotations. Demand moderate. Quotations on soda ash in car lots, per 100 pounds, are as follows: in bulk, $.90; in paper bags, $1.05; and in barrels, $1.35.

STARCH—Prices on corn starch continue unchanged for the current week. Pearl is currently quoted at $3.10 per 100 pounds; powdered starch at $3.20 per 100 pounds; all prices in bags, car lots, f.o.b., Chicago.

SULPHATE OF ALUMINA—Quotations on sulphate of alumina are firm. Demand reported moderate. The commercial grades are currently quoted at $1.15 per 100 pounds; iron free at from $1.75 to $1.85 per 100 pounds, in bags, car lots, f.o.b., works.

SULPHUR—Prices of sulphur are firm and continue to conform to prevailing market quotations. Annual contracts are currently quoted at $16 per long ton, f.o.b., mines. Spot and nearby car lots are quoted at $18 per ton.

TALC—Quotations on talc are firm and continue unchanged at prevailing market prices. Domestic talc is currently quoted at from $15 to $21 per ton, at mills. No quotations on imported talc.

MARKET QUOTATIONS

All market quotations, excepting those otherwise designated as official OPA maximum prices, are based on the manufacturers' price level as of October 1-15, 1941; maximum wholesale prices are based on the merchants' maximum prices for stipulated quantities at a quoted price to all customers of a like class, as shown by the merchant's sales records of goods delivered during March, 1942. A merchant's price list in effect in March 1942, showing quotations of actual shipments, will establish the current maximum prices.

Paper

(Delivered New York)

News, per ton—			
Roll, contract	$50.00	@	—
Sheets	58.00	"	—
Kraft—per cwt.—Carload Quantities			
* Delivered Prices			
Extra Quality	$6.00	@	$7.00
Superstandard	5.25	"	6.25
* No. 1 Wrapping	5.00	"	—
* Standard Bag	4.37½	"	—
Tissues—Per Ream—Carlots			
White No. 1	1.12½	"	—
White No. 1 M. G.	1.05	"	—
White No. 1½	1.00	"	—
White No. 2	1.00	"	—
Anti-Tarnish M. G.	.95	"	—
Colored	—	"	—
Kraft	.95	"	—
Manila	.90	"	—
Unbl. Toilet, 1 M.	4.16	"	—
Bleached Toilet	5.70	"	—
Paper Towels, Per Case—			
Unbleached, Jr.	2.35	"	—
Bleached, Jr.	2.65	"	—
Manila—per cwt.—C			
No. 1 Jute	11.25	@	—
No. 1 Manila Wrapping, 35 lb.	5.50	"	5.75
No. 2 Manila Wrapping, 35 lb.	5.25	"	5.50
Boards, per ton—			
News	*48.00	@	—
Chip	*45.00	"	—
Sgl. Mla. Lt. Chip	*60.00	"	—
White Pat. Coated	*75.00	"	—
Kraft Liners 50 lb.	*60.00	"	—
Binders Boards	84.00	"	116.00

* OPA Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5.; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:

	Bonds	Ledgers
100% Rag Ext. No. 1	$40.25 @ $47.25	$41.40 @ $48.50
100% Rag	32.20 " 37.75	33.35 " 39.25
85% Rag	.... "	32.20 " 37.75
75% Rag	24.75 " 29.00	25.90 " 30.50
65% Rag	.... "	22.80 " 27.75
50% Rag	18.70 " 22.75	19.90 " 24.25
25% Rag	16.40 " 20.00	17.55 " 21.50

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items. Delivered in Zone 1:

	Bonds	Ledgers
No. 1.	$10.55 @ $12.75	$11.70 @ $14.25
No. 2.	9.65 " 11.75	10.80 " 13.25
No. 3.	9.20 " 11.25	10.35 " 12.50
No. 4.	8.90 " 10.75	10.05 " 12.25

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper.

Delivered in Zone 1:

No. 1 Glossy Coated	$13.65	@	$15.50
No. 2 Glossy Coated	12.40	"	14.00
No. 3 Glossy Coated	11.60	"	13.25
No. 4 Glossy Coated	11.15	"	12.75
No. 1 Antique (watermarked)	10.25	"	11.75
No. 2 Offset	9.60	"	11.00
A Grade E. F.	9.35	"	10.75
A Grade S. & S. C.	9.60	"	11.00
B Grade E. F.	8.85	"	10.25
B Grade S. & S. C.	9.10	"	10.50
C Grade E. F.	8.55	"	9.75
C Grade S. & S. C.	8.80	"	10.00
D Grade E. F.	8.25	"	9.50
D Grade S. & S. C	8.50	"	9.75

Ivory & India at $.50 cwt. extra.

Wood Pulp

OPA Maximum Prices and Canadian Manufacturers Prices, Less Freight to Destination.

Bl. Softwood Sulphite	$76.00
Unbl. Softwood Sulphite	64.00 @ 66.00
Bl. Hardwood Sulphite	73.50
Unbl. Hardwood Sulphite	63.50
Bl. Mitscherlich	81.00
Unbl. Mitscherlich	72.00
N. Bleached Sulphate	86.00
S. Bleached Sulphate	79.00
N. Semi-Bleached Sulphate	62.00
S. Semi-Bleached Sulphate	75.00
N. Unbl. Sulphate	73.00
S. Unbl. Sulphate	63.50
Bl. Soda	66.00
Unbl. Soda	62.00
Groundwood	46.00

Transportation Allowances

Applying to Producers of Wet Wood Pulp.

	Below 50% Air Dry Weight
Northeast	$13.50
Lake Central	13.50
Southern	16.00
West Coast (in area)	10.50
West Coast (out area)	16.50

	50%-80% Air Dry Weight
Northeast	$11.50
Lake Central	11.50
Southern	14.00
West Coast (in area)	9.50
West Coast (out area)	15.50

Applying to Producers of Dry Wood Pulp.

	Above 80% Air Dry Weight
Northeast	$8.50
Lake Central	8.50
Southern	11.00
West Coast (in area)	7.50
West Coast (out area)	13.50

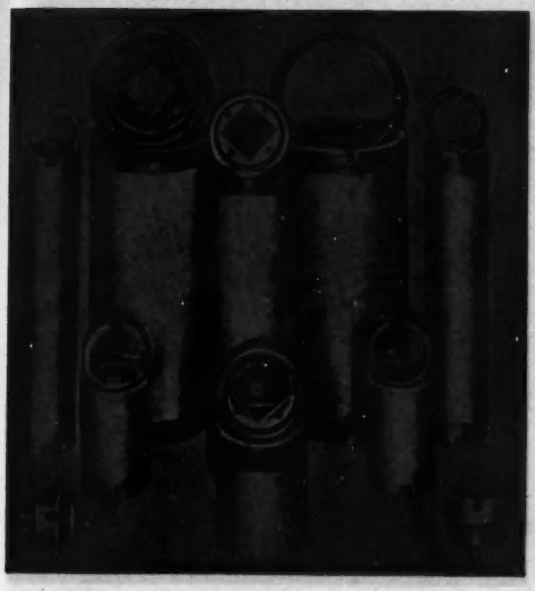
Should freight charges actually exceed these allowances, the difference may be added to the maximum price.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1.	8.00	@	8.25
Silesias No. 1	4.50	"	4.75
New Unbleached	8.00	"	8.25
Blue Overall	5.75	"	6.00
Fancy	3.00	"	3.25
Washables	2.50	"	2.75
Mixed Khaki Cuttings	2.50	"	2.75
O. D. Khaki Cuttings	3.00	"	3.15



ELIXMAN

CAPS

Straight wound paper cores made in sizes from 2" to 10" inside diameter with any thickness wall required.

Long draw protected slot caps of heavy gauge steel in all standard sizes.

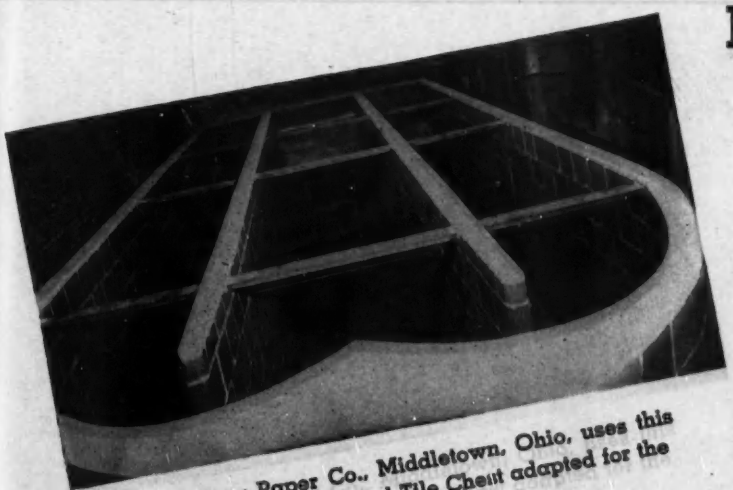
Heavy duty caps with reenforced square hole. This patented feature of reenforcement gives added strength and durability.

CORES

Samples of caps or cores will be gladly submitted

ELIXMAN PAPER CORE COMPANY, INC.

CORINTH, N. Y.



The Sorg Paper Co., Middletown, Ohio, uses this 37-foot Kalamazoo Glazed Tile Chest adapted for the Shartle Bros. "Agi-Flow."

KALAMAZOO TILE CHESTS

Low storage cost, smooth walls inside and out for quick cleaning, and carefully designed adaptation to pump delivery and agitation for stock storage and bleaching — those are the advantages that make Kalamazoo Glazed Tile Chests a good business investment.

Any Kalamazoo Chest can be built to your individual requirements, and delivered promptly. Send for complete information.

Pioneers of Kalamazoo Vitrified Glazed Tile

GLAZED TILE

KALAMAZOO TANK & SILO CO.

KALAMAZOO, MICHIGAN

WOOD

Old Rags

White, No. 1—			
Repacked	*3.80	"	—
Miscellaneous	*3.20	"	—
White, No. 2—			
Repacked	*2.90	"	—
Miscellaneous	*2.65	"	—
Third and Blues—			
Repacked	*2.20	"	—
Miscellaneous	*1.80	"	—
Roofing Rags—			
No. 1	*1.55	"	—
No. 2	*1.45	"	—
No. 3 (bagging)	*1.35	"	—
No. 4	*1.35	"	—
No. 5A	*1.35	"	—
‡ Old Manila Rope	5.75	"	—

*OPA Maximum Prices.

Foreign Rags

All prices nominal
New Rags

New Dark Cuttings	2.25	@	2.40
New Mixed Cuttings	2.00	"	2.20
New Light Silesias	5.50	"	5.75
Light Flannelettes	5.50	"	5.75
New White Cuttings	7.00	"	7.50
New Light Oxfords	4.00	"	4.50
New Light Prints	3.00	"	3.25

Old Rags

No. 1 White Linens	7.50	"	8.50
No. 2 White Linens	6.50	"	7.50
No. 3 White Linens	4.50	"	—
No. 4 White Linens	2.25	"	3.25
No. 1 White Cotton	4.25	"	4.75
No. 2 White Cotton	3.25	"	3.75
No. 3 White Cotton	2.50	"	3.00
No. 4 White Cotton	1.90	"	2.20
Extra Light Prints	2.00	"	2.40
Ord. Light Prints	1.75	"	2.15
Med. Light Prints	1.55	"	1.95
Dutch Blue Cottons	2.25	"	2.50
French Blue Linens	3.00	"	—
Checks and Blues	2.00	"	—
Linsey Garments	1.90	"	2.00
Dark Cottons	1.50	"	1.60
Old Shopperies	1.30	"	1.45
New Shopperies	1.45	"	1.50
French Blues	2.25	"	2.50

BAGGING

(Prices to Mill, f. o. b. N. Y.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	4.00	@	4.25
Wool Tares, light	4.25	"	4.50
Wool Tares heavy	4.50	"	4.75
Bright Bagging	4.50	"	4.85
Manila Rope—			
Foreign	—	"	—
Domestic	*5.75	"	—
Jute Threads	4.25	"	4.75
Sisal Strings	3.25	"	3.75
Mixed Strings	1.10	"	1.20

* OPA Maximum Price.

Old Waste Papers

(F. o. b. New York)
OPA Maximum Prices

No. 1 Hard White Envelope Cuts, one cut	3.37½	@	—
No. 1 Hard White Envelope Cuts	3.12½	"	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
No. 1 Hard White Shavings, ruled	2.50	"	—
Soft White Shavings, one cut	2.87½	"	—
No. 1 Soft White Shavings	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Mixed Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
Mixed Groundwood Colored Shavings	.90	"	—
Overissue Magazines	1.67½	"	—
No. 1 Heavy Books & Magazines	1.57	"	—
Mixed Books	1.07½	"	—
No. 1 White Ledger	2.17½	"	—
No. 2 Mixed Ledger, colored	1.87½	"	—
New Manila Envelope Cuttings, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
Extra Manilas	1.85	"	—
Mixed Kraft, Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
Triple Sorted, No. 1 Brown Soft Kraft	2.50	"	—
New 100% Kraft Corrugated Cuttings	2.25	"	—
No. 1 Assorted Old Kraft	1.75	"	—
New Jute Corrugated Cuttings	1.75	"	—
Old Corrugated Containers	1.00	"	—
Box Board Cuttings	.72½	"	—
White Blank News	1.65	"	—
Overissue News	.85	"	—
No. 1 News	.75	"	—
No. 1 Mixed Paper	.70	"	—

Twines

(F. o. b. Mill)

(Soft Fiber)

Coarse Polished—			
India	.21	@	—
White Hemp	.21	"	—
Fine Polished—			
Fine India	.26	"	—
Unpolished—			
Box	.17¼	"	—
Paper Makers	.17	"	—
Tube Rope	.19	"	—
Wall Paper	.20½	"	—
Wrapping	.23	"	—
Soft Fiber Rope	.19	"	—
Cotton	.25	"	—

(Hard Fiber)

Medium Java	.18	"	—
Mex. Sisal	.16	"	—
Manila	—	"	—

PHILADELPHIA

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White No. 1	.07¼	@	.07½
New White No. 2	.04½	"	.05
Light Silesias	.04½	"	.04¾
Silesias, No. 1	.04	"	.04¼
Black Silesias, soft	.03¾	"	.04
New Unbleached	.07¼	"	.07½
Washable Prints	.03¾	"	.03½
Washable No. 1	.02	"	.02¼
Blue Overall	.04½	"	.05½
Cottons—According to grades—			
Washable shredding	—	"	.01¾
Fancy Percales	.03¼	"	.03½
New Black Soft	.02¾	"	.03
New Dark Seconds	1.75	"	2.00
Khaki Cuttings—			
No. 1 O. D.	.03	"	.03¼
No. 2 Mixed	.02¼	"	.02½
Corduroy	.01¾	"	.02¼
New Canvas	.04¾	"	.05¼
New Black Mixed	—	"	.02½

Domestic Rags (Old)

White No. 1—Repacked	3.80	"	—
White No. 2—Repacked	2.90	"	—
Miscellaneous No. 1	3.20	"	—
Miscellaneous No. 2	2.65	"	—
Thirds and Blues—			
Miscellaneous	1.80	"	—
Repacked	2.20	"	—
Black Stockings—			
(Export)	Nominal		
Roofing Stock—			
Foreign No. 1	Nominal		
Domestic No. 1	1.55	"	—
Domestic No. 2	1.45	"	—
Roofing Bagging	1.35	"	—
Old Manila Rope	5.75	"	—

Bagging

(F. o. b. Phila.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	3.00	"	3.50
Sisal Rope	3.75	"	—
Mixed Rope	.75	"	1.00
Scrap—			
No. 1	3.25	"	3.50
No. 2	1.75	"	1.80
Wool Tares, heavy	4.00	"	4.25
No. 1 New Light Burlap	3.00	"	4.00
New Burlap Cuttings	3.75	"	4.00

Old Papers

(F. o. b. Phila.)
OPA Maximum Prices

No. 1 Hard White Envelope Cuts, one cut	3.37½	"	—
No. 1 Hard White Shavings, unruled	2.50	"	—
Soft White Shavings, one cut	2.87½	"	—
White Blank News	1.65	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 White Ledger	2.17½	"	—
No. 2 Ledger, colored	1.87½	"	—
No. 1 Heavy Books & Magazines	1.57	"	—
Overissue Magazines	1.67½	"	—
New Manila Envelope Cuttings	2.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.70	"	—
Box Board Cuttings	.72½	"	—
Jute Corrugated Cuttings	.90	"	—
Overissue News	.85	"	—
No. 1 News	1.00	"	—

BOSTON

Old Papers

(F. o. b. Boston)
OPA Maximum Prices

No. 1 Hard White Shavings, unruled	2.87½	@	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
Hard White Envelope Cuts, one cut	3.37½	"	—
Triple Sorted No. 1 Brown Soft Kraft	2.50	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
No. 1 Heavy Books & Magazines	1.57	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
White Blank News	1.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.70	"	—
Overissue News	.85	"	—
Box Board Cuttings	.72½	"	—
New Corrugated Cuttings, Kraft	2.25	"	—
Old Corrugated Containers	1.00	"	—
Jute Corrugated Cuttings	1.07½	"	—

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	(nominal)		
Domestic	4.50	@	5.00
Sisal Rope	4.50	"	5.00
Mixed Rope	1.25	"	1.40
Transmission Rope—			
Foreign	(nominal)		
Domestic	4.00	"	4.25
Manila Rope—			
Foreign	(nominal)		
Domestic	5.75	"	—
Soft Jute Rope	5.25	"	5.50
Jute Carpet Threads	3.25	"	3.50
Bleachery Burlap	8.50	"	9.00
Scrap Burlap—			
Foreign	(nominal)		
Domestic	4.50	"	—
Scrap Sisal	4.75	"	5.00
Scrap Sisal for Shredding	5.50	"	5.75
Wool Tares—			
Foreign	(nominal)		
Domestic	5.00	"	5.75
Aust. Wool Pouches	5.25	"	5.50
New Burlap Cuttings	5.50	"	5.75
Heavy Baling Bagging	4.75	"	5.00

Waste Paper

(F. o. b. Chicago)
OPA Maximum Prices.

Shavings—			
No. 1 Hard White Envelope Cuts, one cut	3.37½	"	—
No. 1 Hard White Shavings, unruled	2.50	"	—
No. 1 Soft White Shavings	2.50	"	—
No. 1 White Ledger	2.17½	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 White Ledger	2.17½	"	—
No. 2 Ledger, colored	1.87½	"	—
No. 1 Heavy Books & Magazines	1.57	"	—
Overissue Magazines	1.67½	"	—
New Manila Envelope Cuttings	2.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.70	"	—
Box Board Cuttings	.72½	"	—
Jute Corrugated Cuttings	.90	"	—
Overissue News	.85	"	—
No. 1 News	1.00	"	—
Paper Mill Bagging	3.00	"	3.25
No. 2 Bagging	1.35	"	—*

* OPA Maximum Price.

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.04½	@	.04¾
Fancy Percales	.04¾	"	.05
New White No. 1	.08	"	.08¼
New Light Flannelettes	.06	"	.06¼
Canton Flannel, Bleached	.08¼	"	.06¾
Underwear Cutters, Bleached	.08	"	.08¼
Underwear Cutters, Unbleached	6.50	"	6.75
Silesias No. 1	.06	"	.06¼
New Black Silesias	.03¾	"	.04
Red Cotton Cuttings	.03¾	"	.04
Soft Unbleached	.08¼	"	.08¼
Blue Cheviots	.04¾	"	.05
Fancy	.02¾	"	—
Washable	.01¾	"	—
Cottons According to Grades—			
Blue Overalls	—	"	.05¼
New Black, Soft	.03¾	"	.04
Khaki Cuttings	.04¼	"	.04¾
O. D. Khaki	.04½	"	.04¾
Corduroy	.02	"	.02¼
New Canvas	.06	"	.06¾
B. V. D. Cuttings	.07¾	"	.08

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—			
Repacked	3.80	@	—*
Miscellaneous	3.20	"	—*
White No. 2—			
Miscellaneous	2.65	"	—*
Twos and Blues, Repacked	2.20	"	—*
Old Blue Overalls	2.25	"	2.50
Thirds and Blues, Repacked	2.20	"	—*
Miscellaneous	1.80	"	—*
Black Stockings	3.50	"	4.00
Roofing Stock—			
No. 1	1.55	"	—*
No. 2	1.45	"	—*
No. 3	1.35	"	—*
No. 4	1.35	"	—*
No. 5, Quality A	1.35	"	—*
Quality B	1.20	"	—*
Quality C	.95	"	—*
* Old Manila Rope	5.75	"	—

* OPA Maximum Prices.

Foreign Rags

(F. o. b. Boston)

Canvas	(nominal)
Dark Cottons	(nominal)
Dutch Blues	(nominal)
New Checks and Blues	(nominal)
Old Fustians	(nominal)
Old Linsey Garments	(nominal)
New Silesias	(nominal)

CHICAGO

No. 1 Heavy Books & Magazines	1.57	"	—
White Blank News	1.65	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
No. 1 Assorted Old Kraft	1.75	"	—
Overissue News	.85	"	—
No. 1 News	.75	"	—
No. 1 Mixed Paper	.70	"	—
No. 1 Roofing Rags	1.55	"	—
No. 2 Roofing Rags	1.45	"	—